Cat 2023 previous-year-papers

Here, you can solve all the questions asked in Cat 2023 previous-year-papers Previous Year Question Paper on 2022-11-22 in the Evening exam. The detailed solutions are also provided for every previous year question and some of these questions can be asked again in your Cat 2023 previous-year-papers exam. There are 66 questions in the exam and 120 minutes are provided for the Cat 2023 previous-year-papers exam. The Cutoff of the exam was 100 marks hence you should try to score at least 110 marks.

Cat 2023

Comprehension :
The passage below is accompanied by a set of questions. Choose the best answer to each question. Sociologists working in the Chicago School tradition have focused on how rapid or dramatic social change causes increases in crime. Just as Durkheim, Marx, Toennies, and other European sociologists thought that the rapid changes produced by industrialization and urbanization produced crime and disorder, so too did the Chicago School theorists. The location of the University of Chicago provided an excellent opportunity for Park, Burgess, and McKenzie to study the social ecology of the city. Shaw and McKay found . . . that areas of the city characterized by high levels of social disorganization had higher rates of crime and delinquency. In the 1920s and 1930s Chicago, like many American cities, experienced considerable immigration. Rapid population growth is a disorganizing influence, but growth resulting from in-migration of very different people is particularly disruptive. Chicago's in-migrants were both native-born whites and blacks from rural areas and small towns, and foreign immigrants. The heavy industry of cities like Chicago, Detroit, and Pittsburgh drew those seeking opportunities and new lives. Farmers and villagers from America's hinterland, like their European cousins of whom Durkheim wrote, moved in large numbers into cities. At the start of the twentieth century, Americans were predominately a rural population, but by the century's mid-point most lived in urban areas. The social lives of these migrants, as well as those already living in the cities they moved to, were disrupted by the differences between urban and rural life. According to social disorganization theory, until the social ecology of the ''new place'' can adapt, this rapid change is a criminogenic influence. But most rural migrants, and even many of the foreign immigrants to the city, looked like and eventually spoke the same language as the natives of the cities into which they moved. These similarities allowed for more rapid social integration for these migrants than was the case for African Americans and most foreign immigrants. In these same decades America experienced what has been called ''the great migration'': the massive movement of African Americans out of the rural South and into northern (and some southern) cities. The scale of this migration is one of the most dramatic in human history. These migrants, unlike their white counterparts, were not integrated into the cities they now called home. In fact, most American cities at the end of the twentieth century were characterized by high levels of racial residential segregation . . . Failure to integrate these migrants, coupled with other forces of social disorganization such as crowding, poverty, and

illness, caused crime rates to climb in the cities, particularly in the segregated wards and neighborhoods where the migrants were forced to live. Foreign immigrants during this period did not look as dramatically different from the rest of the population as blacks did, but the migrants from eastern and southern Europe who came to American cities did not speak English, and were frequently Catholic, while the native born were mostly Protestant. The combination of rapid population growth with the diversity of those moving into the cities created what the Chicago School sociologists called social disorganization.

Question 1 :
A fundamental conclusion by the author is that:

Difficulty : Moderate | **Average Time : 179 Seconds**

Options :

1. the best circumstances for crime to flourish are when there are severe racial disparities.
2. to prevent crime, it is important to maintain social order through maintaining social segregation.
3. according to European sociologists, crime in America is mainly in Chicago.
4. rapid population growth and demographic diversity give rise to social disorganisation that can feed the growth of crime.

Solution :
The correct answer is **Option 4** i.e. **rapid population growth and demographic diversity give rise to social disorganisation that can feed the growth of crime.**

Option 1 is incorrect as it blames racial disparities for the flourishing of crime.The passage only says that where there is massive migration of people of different races into cities without social integration, crime flourishes.

Option 2 is incorrect as it is the opposite of what the passage says.

Option 3 is incorrect as the passage does not say that according to European sociologists, crime in America is mainly in Chicago.

Option 4 is correct by referring to the last line: "The combination of rapid population growth with the diversity of those moving into the cities created what the Chicago School sociologists called social disorganization". Rapid or dramatic social change, according to the passage, causes increases in crime. So, a fundamental conclusion by the author is that rapid population growth and demographic diversity give rise to social disorganisation that can feed the growth of crime.

Hence, according to the question option 4 is correct.

Comprehension :
The passage below is accompanied by a set of questions. Choose the best answer to each question. Sociologists working in the Chicago School tradition have focused on how rapid or dramatic social change causes increases in crime. Just as

Durkheim, Marx, Toennies, and other European sociologists thought that the rapid changes produced by industrialization and urbanization produced crime and disorder, so too did the Chicago School theorists. The location of the University of Chicago provided an excellent opportunity for Park, Burgess, and McKenzie to study the social ecology of the city. Shaw and McKay found . . . that areas of the city characterized by high levels of social disorganization had higher rates of crime and delinquency. In the 1920s and 1930s Chicago, like many American cities, experienced considerable immigration. Rapid population growth is a disorganizing influence, but growth resulting from in-migration of very different people is particularly disruptive. Chicago's in-migrants were both native-born whites and blacks from rural areas and small towns, and foreign immigrants. The heavy industry of cities like Chicago, Detroit, and Pittsburgh drew those seeking opportunities and new lives. Farmers and villagers from America's hinterland, like their European cousins of whom Durkheim wrote, moved in large numbers into cities. At the start of the twentieth century, Americans were predominately a rural population, but by the century's mid-point most lived in urban areas. The social lives of these migrants, as well as those already living in the cities they moved to, were disrupted by the differences between urban and rural life. According to social disorganization theory, until the social ecology of the ''new place'' can adapt, this rapid change is a criminogenic influence. But most rural migrants, and even many of the foreign immigrants to the city, looked like and eventually spoke the same language as the natives of the cities into which they moved. These similarities allowed for more rapid social integration for these migrants than was the case for African Americans and most foreign immigrants. In these same decades America experienced what has been called ''the great migration'': the massive movement of African Americans out of the rural South and into northern (and some southern) cities. The scale of this migration is one of the most dramatic in human history. These migrants, unlike their white counterparts, were not integrated into the cities they now called home. In fact, most American cities at the end of the twentieth century were characterized by high levels of racial residential segregation . . . Failure to integrate these migrants, coupled with other forces of social disorganization such as crowding, poverty, and illness, caused crime rates to climb in the cities, particularly in the segregated wards and neighborhoods where the migrants were forced to live. Foreign immigrants during this period did not look as dramatically different from the rest of the population as blacks did, but the migrants from eastern and southern Europe who came to American cities did not speak English, and were frequently Catholic, while the native born were mostly Protestant. The combination of rapid population growth with the diversity of those moving into the cities created what the Chicago School sociologists called social disorganization.

Question 2 :

Which one of the following sets of words/phrases best encapsulates the issues discussed in the passage?

Difficulty : Moderate **Average Time : 238 Seconds**

Options :

1. Durkheim; Marx; Toennies; Shaw
2. Chicago School; Native-born Whites; European immigrants; Poverty
3. Chicago School; Social organisation; Migration; Crime

Rapid population growth; Heavy industry; Segregation; Crime

Solution :

The correct answer is **Option 3** i.e. **Chicago School; Social organisation; Migration; Crime.**

Option 1 is incorrect as it names some sociologists mentioned in the passage. This can be easily ruled out.

Option 2 is incorrect as it does not mention 'crime' which is a key idea.

Option 3 is correct as it contains all key ideas of the passage i.e. Chicago School, social organisation,migration and crime.

Option 4 is incorrect as it includes 'heavy industry' which is not a key idea.

Hence, according to the question option 3 is correct.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. Sociologists working in the Chicago School tradition have focused on how rapid or dramatic social change causes increases in crime. Just as Durkheim, Marx, Toennies, and other European sociologists thought that the rapid changes produced by industrialization and urbanization produced crime and disorder, so too did the Chicago School theorists. The location of the University of Chicago provided an excellent opportunity for Park, Burgess, and McKenzie to study the social ecology of the city. Shaw and McKay found . . . that areas of the city characterized by high levels of social disorganization had higher rates of crime and delinquency. In the 1920s and 1930s Chicago, like many American cities, experienced considerable immigration. Rapid population growth is a disorganizing influence, but growth resulting from in-migration of very different people is particularly disruptive. Chicago's in-migrants were both native-born whites and blacks from rural areas and small towns, and foreign immigrants. The heavy industry of cities like Chicago, Detroit, and Pittsburgh drew those seeking opportunities and new lives. Farmers and villagers from America's hinterland, like their European cousins of whom Durkheim wrote, moved in large numbers into cities. At the start of the twentieth century, Americans were predominately a rural population, but by the century's mid-point most lived in urban areas. The social lives of these migrants, as well as those already living in the cities they moved to, were disrupted by the differences between urban and rural life. According to social disorganization theory, until the social ecology of the ''new place'' can adapt, this rapid change is a criminogenic influence. But most rural migrants, and even many of the foreign immigrants to the city, looked like and eventually spoke the same language as the natives of the cities into which they moved. These similarities allowed for more rapid social integration for these migrants than was the case for African Americans and most foreign immigrants. In these same decades America experienced what has been called ''the great migration'': the massive movement of African Americans out of the rural South and into northern (and some southern) cities. The scale of this migration is one of the most dramatic in human history. These migrants, unlike their white counterparts, were not integrated into the cities they now called home. In fact, most American cities at the end of the twentieth century were characterized by high levels of racial residential segregation . . . Failure to integrate these migrants, coupled with other forces of social disorganization such as crowding, poverty, and illness, caused crime rates to climb in the cities, particularly in the segregated wards and neighborhoods where the migrants were forced to live. Foreign immigrants during this period did not look as dramatically different from the rest of the

population as blacks did, but the migrants from eastern and southern Europe who came to American cities did not speak English, and were frequently Catholic, while the native born were mostly Protestant. The combination of rapid population growth with the diversity of those moving into the cities created what the Chicago School sociologists called social disorganization.

Question 3 :
Which one of the following is not a valid inference from the passage?

Difficulty : Moderate | **Average Time : 206 Seconds**

Options :

1. The differences between urban and rural lifestyles were crucial factors in the disruption experienced by migrants to American cities.
2. According to social disorganisation theory, the social integration of African American migrants into Chicago was slower because they were less organised.
3. According to social disorganisation theory, fast-paced social change provides fertile ground for the rapid growth of crime.
4. The failure to integrate in-migrants, along with social problems like poverty, was a significant reason for the rise in crime in American cities.

Solution :
The correct answer is **Option 2** i.e. **According to social disorganisation theory, the social integration of African American migrants into Chicago was slower because they were less organised.**

Option 1, Option 3 and **Option 4** are based on key ideas in the passage and can be easily inferred.

Option 2 is the only statemnet which is not a valid inference from the passage. The passage does not say that African American migrants into Chicago were 'less organised' and hence unable to integrate into society.

Hence, according to the question option 2 is correct.

Comprehension :
The passage below is accompanied by a set of questions. Choose the best answer to each question. Sociologists working in the Chicago School tradition have focused on how rapid or dramatic social change causes increases in crime. Just as Durkheim, Marx, Toennies, and other European sociologists thought that the rapid changes produced by industrialization and urbanization produced crime and disorder, so too did the Chicago School theorists. The location of the University of Chicago provided an excellent opportunity for Park, Burgess, and McKenzie to study the social ecology of the city. Shaw and McKay found . . . that areas of the city characterized by high levels of social disorganization had higher rates of crime

and delinquency. In the 1920s and 1930s Chicago, like many American cities, experienced considerable immigration. Rapid population growth is a disorganizing influence, but growth resulting from in-migration of very different people is particularly disruptive. Chicago's in-migrants were both native-born whites and blacks from rural areas and small towns, and foreign immigrants. The heavy industry of cities like Chicago, Detroit, and Pittsburgh drew those seeking opportunities and new lives. Farmers and villagers from America's hinterland, like their European cousins of whom Durkheim wrote, moved in large numbers into cities. At the start of the twentieth century, Americans were predominately a rural population, but by the century's mid-point most lived in urban areas. The social lives of these migrants, as well as those already living in the cities they moved to, were disrupted by the differences between urban and rural life. According to social disorganization theory, until the social ecology of the ''new place'' can adapt, this rapid change is a criminogenic influence. But most rural migrants, and even many of the foreign immigrants to the city, looked like and eventually spoke the same language as the natives of the cities into which they moved. These similarities allowed for more rapid social integration for these migrants than was the case for African Americans and most foreign immigrants. In these same decades America experienced what has been called ''the great migration'': the massive movement of African Americans out of the rural South and into northern (and some southern) cities. The scale of this migration is one of the most dramatic in human history. These migrants, unlike their white counterparts, were not integrated into the cities they now called home. In fact, most American cities at the end of the twentieth century were characterized by high levels of racial residential segregation . . . Failure to integrate these migrants, coupled with other forces of social disorganization such as crowding, poverty, and illness, caused crime rates to climb in the cities, particularly in the segregated wards and neighborhoods where the migrants were forced to live. Foreign immigrants during this period did not look as dramatically different from the rest of the population as blacks did, but the migrants from eastern and southern Europe who came to American cities did not speak English, and were frequently Catholic, while the native born were mostly Protestant. The combination of rapid population growth with the diversity of those moving into the cities created what the Chicago School sociologists called social disorganization.

Question 4 :

The author notes that, "At the start of the twentieth century, Americans were predominately a rural population, but by the century's mid-point most lived in urban areas." Which one of the following statements, if true, does not contradict this statement?

Difficulty : Moderate | **Average Time : 226 Seconds**

Options :

1. Demographic transition in America in the twentieth century is strongly marked by an out-migration from rural areas
2. The estimation of per capita income in America in the mid-twentieth century primarily required data from rural areas.
3. Economists have found that throughout the twentieth century, the size of the labour force in America has always been largest in rural areas
4. A population census conducted in 1952 showed that more Americans lived in rural areas than in urban ones.

Solution :
The correct answer is **Option 1** i.e**.Demographic transition in America in the twentieth century is strongly marked by an out-migration from rural areas.**

Option 1 is correct as it states that demographic transition in America in the twentieth century is strongly marked by an out-migration from rural areas. If true, this is in line with the statement that Americans were predominantly rural at the start of the 20th century, but most lived in urban areas by the 1950s.

Option 2 is incorrect as it contradicts the given statement. If the estimation of per capita income in America in the mid-twentieth century primarily required data from rural areas, then most of the population should have been living in rural areas.

Option 3 is incorrect as If economists have found that throughout the twentieth century, the size of the labour force in America has always been largest in rural areas, then that contradicts the given statement too.

Option 4 is incorrect as it states that a population census conducted in 1952 showed that more Americans lived in rural areas than in urban ones. If true this contradicts the given statement.

Hence, according to the question option 1 is correct.

Comprehension :
The passage below is accompanied by a set of questions. Choose the best answer to each question. Interpretations of the Indian past . . . were inevitably influenced by colonial concerns and interests, and also by prevalent European ideas about history, civilization and the Orient. Orientalist scholars studied the languages and the texts with selected Indian scholars, but made little attempt to understand the world-view of those who were teaching them. The readings therefore are something of a disjuncture from the traditional ways of looking at the Indian past. . . . Orientalism [which we can understand broadly as Western perceptions of the Orient] fuelled the fantasy and the freedom sought by European Romanticism, particularly in its opposition to the more disciplined Neo-Classicism. The cultures of Asia were seen as bringing a new Romantic paradigm. Another Renaissance was anticipated through an acquaintance with the Orient, and this, it was thought, would be different from the earlier Greek Renaissance. It was believed that this Oriental Renaissance would liberate European thought and literature from the increasing focus on discipline and rationality that had followed from the earlier Enlightenment. . . . [The Romantic English poets, Wordsworth and Coleridge,] were apprehensive of the changes introduced by industrialization and turned to nature and to fantasies of the Orient. However, this enthusiasm gradually changed, to conform with the emphasis later in the nineteenth century on the innate superiority of European civilization. Oriental civilizations were now seen as having once been great but currently in decline. The various phases of Orientalism tended to mould European understanding of the Indian past into a particular pattern. . . . There was an attempt to formulate Indian culture as uniform, such formulations being derived from texts that were given priority. The so-called ‘discovery’ of India was largely through selected literature in Sanskrit. This interpretation tended to emphasize non-historical aspects of Indian culture, for example the idea of an unchanging continuity of society and religion over 3,000 years; and it was believed that the Indian pattern of life was so concerned with metaphysics and the subtleties of religious belief that little attention was given to the more tangible aspects. German Romanticism endorsed this image of India, and it

became the mystic land for many Europeans, where even the most ordinary actions were imbued with a complex symbolism. This was the genesis of the idea of the spiritual east, and also, incidentally, the refuge of European intellectuals seeking to distance themselves from the changing patterns of their own societies. A dichotomy in values was maintained, Indian values being described as ‘spiritual’ and European values as ‘materialistic’, with little attempt to juxtapose these values with the reality of Indian society. This theme has been even more firmly endorsed by a section of Indian opinion during the last hundred years. It was a consolation to the Indian intelligentsia for its perceived inability to counter the technical superiority of the west, a superiority viewed as having enabled Europe to colonize Asia and other parts of the world. At the height of anti-colonial nationalism it acted as a salve for having been made a colony of Britain.

Question 5 :

It can be inferred from the passage that to gain a more accurate view of a nation’s history and culture, scholars should do all of the following EXCEPT:

Difficulty : Moderate **Average Time : 244 Seconds**

Options :

1. examine their own beliefs and biases.
2. develop an oppositional framework to grasp cultural differences.
3. examine the complex reality of that nation’s society.
4. read widely in the country’s literature.

Solution :

The correct answer is **Option 2** i.e. **develop an oppositional framework to grasp cultural differences.**

Option 1, Option 3 and **Option 4** cannot be inferred from the passage as they are having ideas to gain a more accurate view of a nation's history and culture, scholars.

Option 2 is correct as the passage says that Orientalist scholars who studied Indian texts made "little attempt to understand the world-view of those who were teaching them". The author argues that the idea of the 'spiritual' East as opposed to the 'materialistic' West promoted by European intellectuals was at a disjuncture from traditional ways of looking at the Indian past. So, it can be inferred from the passage that to gain a more accurate view of a nation's history and culture, scholars should not attempt to develop an oppositional framework to grasp cultural differences.

Hence, according to the question option 2 is correct.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. Interpretations of the Indian past . . . were inevitably influenced by colonial concerns and interests, and also by prevalent European ideas about history, civilization and the Orient. Orientalist scholars studied the languages and the texts with selected Indian scholars, but made little attempt to understand the world-view of those who were teaching them. The readings therefore are

something of a disjuncture from the traditional ways of looking at the Indian past. . . . Orientalism [which we can understand broadly as Western perceptions of the Orient] fuelled the fantasy and the freedom sought by European Romanticism, particularly in its opposition to the more disciplined Neo-Classicism. The cultures of Asia were seen as bringing a new Romantic paradigm. Another Renaissance was anticipated through an acquaintance with the Orient, and this, it was thought, would be different from the earlier Greek Renaissance. It was believed that this Oriental Renaissance would liberate European thought and literature from the increasing focus on discipline and rationality that had followed from the earlier Enlightenment. . . . [The Romantic English poets, Wordsworth and Coleridge,] were apprehensive of the changes introduced by industrialization and turned to nature and to fantasies of the Orient. However, this enthusiasm gradually changed, to conform with the emphasis later in the nineteenth century on the innate superiority of European civilization. Oriental civilizations were now seen as having once been great but currently in decline. The various phases of Orientalism tended to mould European understanding of the Indian past into a particular pattern. . . . There was an attempt to formulate Indian culture as uniform, such formulations being derived from texts that were given priority. The so-called 'discovery' of India was largely through selected literature in Sanskrit. This interpretation tended to emphasize non-historical aspects of Indian culture, for example the idea of an unchanging continuity of society and religion over 3,000 years; and it was believed that the Indian pattern of life was so concerned with metaphysics and the subtleties of religious belief that little attention was given to the more tangible aspects. German Romanticism endorsed this image of India, and it became the mystic land for many Europeans, where even the most ordinary actions were imbued with a complex symbolism. This was the genesis of the idea of the spiritual east, and also, incidentally, the refuge of European intellectuals seeking to distance themselves from the changing patterns of their own societies. A dichotomy in values was maintained, Indian values being described as 'spiritual' and European values as 'materialistic', with little attempt to juxtapose these values with the reality of Indian society. This theme has been even more firmly endorsed by a section of Indian opinion during the last hundred years. It was a consolation to the Indian intelligentsia for its perceived inability to counter the technical superiority of the west, a superiority viewed as having enabled Europe to colonize Asia and other parts of the world. At the height of anti-colonial nationalism it acted as a salve for having been made a colony of Britain.

Question 6 :

In the context of the passage, all of the following statements are true EXCEPT:

Difficulty : Moderate | **Average Time : 216 Seconds**

Options :

1. India's spiritualism served as a salve for European colonisers.
2. Orientalists' understanding of Indian history was linked to colonial concerns.
3. Indian texts influenced Orientalist scholars.
4. Orientalist scholarship influenced Indians.

Solution :

The correct answer is **Option 1** i.e. **India's spiritualism served as a salve for European colonisers.**

Option 1 is correct as the answer and hence true with respect to the passage as the last line of the passage implies that India's spiritualism served as a salve for anti-colonial nationalists.

Option 2 is incorrect as that Orientalists' understanding of Indian history was linked to colonial concerns can also be inferred from passage.

Option 3 is incorrect as the passage says that Orientalist scholars tried to 'discover' India through 'selected literature' in Sanskrit. So, option B can also be inferred from passage.

Option 4 is incorrect as the Oriental scholarship influenced Indians is implied from the first line of the paragraph.

Hence, according to the question option 1 is correct.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. Interpretations of the Indian past . . . were inevitably influenced by colonial concerns and interests, and also by prevalent European ideas about history, civilization and the Orient. Orientalist scholars studied the languages and the texts with selected Indian scholars, but made little attempt to understand the world-view of those who were teaching them. The readings therefore are something of a disjuncture from the traditional ways of looking at the Indian past. . . . Orientalism [which we can understand broadly as Western perceptions of the Orient] fuelled the fantasy and the freedom sought by European Romanticism, particularly in its opposition to the more disciplined Neo-Classicism. The cultures of Asia were seen as bringing a new Romantic paradigm. Another Renaissance was anticipated through an acquaintance with the Orient, and this, it was thought, would be different from the earlier Greek Renaissance. It was believed that this Oriental Renaissance would liberate European thought and literature from the increasing focus on discipline and rationality that had followed from the earlier Enlightenment. . . . [The Romantic English poets, Wordsworth and Coleridge,] were apprehensive of the changes introduced by industrialization and turned to nature and to fantasies of the Orient. However, this enthusiasm gradually changed, to conform with the emphasis later in the nineteenth century on the innate superiority of European civilization. Oriental civilizations were now seen as having once been great but currently in decline. The various phases of Orientalism tended to mould European understanding of the Indian past into a particular pattern. . . . There was an attempt to formulate Indian culture as uniform, such formulations being derived from texts that were given priority. The so-called ‘discovery’ of India was largely through selected literature in Sanskrit. This interpretation tended to emphasize non-historical aspects of Indian culture, for example the idea of an unchanging continuity of society and religion over 3,000 years; and it was believed that the Indian pattern of life was so concerned with metaphysics and the subtleties of religious belief that little attention was given to the more tangible aspects. German Romanticism endorsed this image of India, and it became the mystic land for many Europeans, where even the most ordinary actions were imbued with a complex symbolism. This was the genesis of the idea of the spiritual east, and also, incidentally, the refuge of European intellectuals seeking to distance themselves from the changing patterns of their own societies. A dichotomy in values was maintained, Indian values being described as ‘spiritual’ and European values as ‘materialistic’, with little attempt to juxtapose these values with the reality of Indian society. This theme has been even more firmly endorsed by a section of Indian opinion during the last hundred years. It was a consolation to the Indian intelligentsia for its perceived inability to counter the technical superiority of the west, a superiority viewed as having enabled Europe to colonize Asia and other

parts of the world. At the height of anti-colonial nationalism it acted as a salve for having been made a colony of Britain.

Question 7 :

It can be inferred from the passage that the author is not likely to support the view that:

Difficulty : Moderate | **Average Time : 214 Seconds**

Options :

1. India's culture has evolved over the centuries.
2. Indian culture acknowledges the material aspects of life.
3. the Orientalist view of Asia fired the imagination of some Western poets.
4. India became a colony although it matched the technical knowledge of the West

Solution :

The correct answer is **Option 4** i.e. **India became a colony although it matched the technical knowledge of the west.**

Option 1 is incorrect as it is a view that the author is likely to support.

Option 2 is incorrect as the author argues that European intellectuals paid "little attention was given to the more tangible aspects" of the Indian pattern of life and tried to maintain a dichotomy in values with "little attempt to juxtapose these values with the reality of Indian society". So, the author is likely to support the view that Indian culture acknowledges the material aspects of life.

Option 3 is incorrect as according to the passage, "The Romantic English poets, Wordsworth and Coleridge, were apprehensive of the changes introduced by industrialization and turned to nature and to fantasies of the Orient." So, the author is likely to support the view that the Orientalist view of Asia fired the imagination of some Western poets.

Option 4 is correct as the author says that the dichotomy of values maintained by European intellectuals "was a consolation to the Indian intelligentsia for its perceived inability to counter the technical superiority of the west, a superiority viewed as having enabled Europe to colonize Asia and other parts of the world." The author is hence not likely to support the view that India became a colony although it matched the technical knowledge of the West.

Hence, according to the question option 4 is correct.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. Interpretations of the Indian past . . . were inevitably influenced by colonial concerns and interests, and also by prevalent European ideas about history, civilization and the Orient. Orientalist scholars studied the languages and the texts with selected Indian scholars, but made little attempt to understand the world-view of those who were teaching them. The readings therefore are something of a disjuncture from the traditional ways of looking at the Indian past. . . . Orientalism [which we can understand broadly as Western perceptions of the Orient] fuelled the fantasy and the freedom sought by European

Romanticism, particularly in its opposition to the more disciplined Neo-Classicism. The cultures of Asia were seen as bringing a new Romantic paradigm. Another Renaissance was anticipated through an acquaintance with the Orient, and this, it was thought, would be different from the earlier Greek Renaissance. It was believed that this Oriental Renaissance would liberate European thought and literature from the increasing focus on discipline and rationality that had followed from the earlier Enlightenment. . . . [The Romantic English poets, Wordsworth and Coleridge,] were apprehensive of the changes introduced by industrialization and turned to nature and to fantasies of the Orient. However, this enthusiasm gradually changed, to conform with the emphasis later in the nineteenth century on the innate superiority of European civilization. Oriental civilizations were now seen as having once been great but currently in decline. The various phases of Orientalism tended to mould European understanding of the Indian past into a particular pattern. . . . There was an attempt to formulate Indian culture as uniform, such formulations being derived from texts that were given priority. The so-called 'discovery' of India was largely through selected literature in Sanskrit. This interpretation tended to emphasize non-historical aspects of Indian culture, for example the idea of an unchanging continuity of society and religion over 3,000 years; and it was believed that the Indian pattern of life was so concerned with metaphysics and the subtleties of religious belief that little attention was given to the more tangible aspects. German Romanticism endorsed this image of India, and it became the mystic land for many Europeans, where even the most ordinary actions were imbued with a complex symbolism. This was the genesis of the idea of the spiritual east, and also, incidentally, the refuge of European intellectuals seeking to distance themselves from the changing patterns of their own societies. A dichotomy in values was maintained, Indian values being described as 'spiritual' and European values as 'materialistic', with little attempt to juxtapose these values with the reality of Indian society. This theme has been even more firmly endorsed by a section of Indian opinion during the last hundred years. It was a consolation to the Indian intelligentsia for its perceived inability to counter the technical superiority of the west, a superiority viewed as having enabled Europe to colonize Asia and other parts of the world. At the height of anti-colonial nationalism it acted as a salve for having been made a colony of Britain.

Question 8 :

Which one of the following styles of research is most similar to the Orientalist scholars' method of understanding Indian history and culture?

Difficulty : Moderate | **Average Time : 248 Seconds**

Options :

1. Reading about the life of early American settlers and later waves of migration to understand the evolution of American culture.
2. Reading 18th century accounts by travellers to India to see how they viewed Indian life and culture of the time.
3. Studying artefacts excavated at a palace to understand the lifestyle of those who lived there.
4. Analysing Hollywood action movies that depict violence and sex to understand contemporary America.

Solution :

The correct answer is **Option 4** i.e **Analysing Hollywood action movies that depict violence and sex to understand**

contemporary America.

Option 1, Option 2 and **Option 3** are incorrect as these options are not competely similar with the key ideas of the passage.

Option 4 is correct as in the passage there was an attempt to selectively analyze material that conformed to a specific view of India. Analysing Hollywood action movies that depict violence and sex to understand contemporary America is similar to this.

Hence, according to the question option 4 is correct.

Comprehension :
The passage below is accompanied by a set of questions. Choose the best answer to each question. As software improves, the people using it become less likely to sharpen their own know-how. Applications that offer lots of prompts and tips are often to blame; simpler, less solicitous programs push people harder to think, act and learn. Ten years ago, information scientists at Utrecht University in the Netherlands had a group of people carry out complicated analytical and planning tasks using either rudimentary software that provided no assistance or sophisticated software that offered a great deal of aid. The researchers found that the people using the simple software developed better strategies, made fewer mistakes and developed a deeper aptitude for the work. The people using the more advanced software, meanwhile, would often “aimlessly click around” when confronted with a tricky problem. The supposedly helpful software actually short-circuited their thinking and learning. [According to] philosopher Hubert Dreyfus . . . . our skills get sharper only through practice, when we use them regularly to overcome different sorts of difficult challenges. The goal of modern software, by contrast, is to ease our way through such challenges. Arduous, painstaking work is exactly what programmers are most eager to automate—after all, that is where the immediate efficiency gains tend to lie. In other words, a fundamental tension ripples between the interests of the people doing the automation and the interests of the people doing the work. Nevertheless, automation’s scope continues to widen. With the rise of electronic health records, physicians increasingly rely on software templates to guide them through patient exams. The programs incorporate valuable checklists and alerts, but they also make medicine more routinized and formulaic—and distance doctors from their patients . . . . Harvard Medical School professor Beth Lown, in a 2012 journal article . . . warned that when doctors become “screen-driven,” following a computer’s prompts rather than “the patient’s narrative thread,” their thinking can become constricted. In the worst cases, they may miss important diagnostic signals. . . . In a recent paper published in the journal Diagnosis, three medical researchers . . . examined the misdiagnosis of Thomas Eric Duncan, the first person to die of Ebola in the U.S., at Texas Health Presbyterian Hospital Dallas. They argue that the digital templates used by the hospital’s clinicians to record patient information probably helped to induce a kind of tunnel vision. “These highly constrained tools,” the researchers write, “are optimized for data capture but at the expense of sacrificing their utility for appropriate triage and diagnosis, leading users to miss the forest for the trees.” Medical software, they write, is no “replacement for basic history-taking, examination skills, and critical thinking.” . . . There is an alternative. In “human-centered automation,” the talents of people take precedence . . . . In this model, software plays an essential but secondary role. It takes over routine functions that a human operator has already mastered, issues alerts when unexpected situations arise, provides fresh information that expands the operator’s perspective and counters the biases that often distort human thinking. The technology becomes

the expert’s partner, not the expert’s replacement.

Question 9 :

In the Ebola misdiagnosis case, we can infer that doctors probably missed the forest for the trees because:

Difficulty : Moderate | **Average Time : 215 Seconds**

Options :

1. they were led by the data processed by digital templates.
2. the data collected were not sufficient for appropriate triage.
3. they used the wrong type of digital templates for the case.
4. the digital templates forced them to acquire tunnel vision.

Solution :

The correct answer is **Option 1** i.e. **they were led by the data processed by digital templates**

Option 1 is correct as according to the passage, researchers in the Ebola misdiagnosis case believe that the digital templates used by the hospital's clinicians to record patient information “probably helped to induce a kind of tunnel vision". So, the doctors were led by the data processed by digital templates.

Option 2 and **Option 3** both are incorrect as they cannot be inferred from the passage key information.

Option 4 is incorrect as it says the templates "forced" doctors to acquire tunnel vision. This is too extreme.

Hence, according to the question option 1 is correct.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. As software improves, the people using it become less likely to sharpen their own know-how. Applications that offer lots of prompts and tips are often to blame; simpler, less solicitous programs push people harder to think, act and learn. Ten years ago, information scientists at Utrecht University in the Netherlands had a group of people carry out complicated analytical and planning tasks using either rudimentary software that provided no assistance or sophisticated software that offered a great deal of aid. The researchers found that the people using the simple software developed better strategies, made fewer mistakes and developed a deeper aptitude for the work. The people using the more advanced software, meanwhile, would often “aimlessly click around” when confronted with a tricky problem. The supposedly helpful software actually short-circuited their thinking and learning. [According to] philosopher Hubert Dreyfus . . . . our skills get sharper only through practice, when we use them regularly to overcome different sorts of difficult challenges. The goal of modern software, by contrast, is to ease our way through such challenges. Arduous, painstaking work is exactly what programmers are most eager to automate—after all, that is where the immediate efficiency gains tend to lie. In other words, a fundamental tension ripples between the interests of the people doing the automation and the interests of the people doing the work.

Nevertheless, automation's scope continues to widen. With the rise of electronic health records, physicians increasingly rely on software templates to guide them through patient exams. The programs incorporate valuable checklists and alerts, but they also make medicine more routinized and formulaic—and distance doctors from their patients . . . . Harvard Medical School professor Beth Lown, in a 2012 journal article . . . warned that when doctors become "screen-driven," following a computer's prompts rather than "the patient's narrative thread," their thinking can become constricted. In the worst cases, they may miss important diagnostic signals. . . . In a recent paper published in the journal Diagnosis, three medical researchers . . . examined the misdiagnosis of Thomas Eric Duncan, the first person to die of Ebola in the U.S., at Texas Health Presbyterian Hospital Dallas. They argue that the digital templates used by the hospital's clinicians to record patient information probably helped to induce a kind of tunnel vision. "These highly constrained tools," the researchers write, "are optimized for data capture but at the expense of sacrificing their utility for appropriate triage and diagnosis, leading users to miss the forest for the trees." Medical software, they write, is no "replacement for basic history-taking, examination skills, and critical thinking." . . . There is an alternative. In "human-centered automation," the talents of people take precedence . . . . In this model, software plays an essential but secondary role. It takes over routine functions that a human operator has already mastered, issues alerts when unexpected situations arise, provides fresh information that expands the operator's perspective and counters the biases that often distort human thinking. The technology becomes the expert's partner, not the expert's replacement.

Question 10 :

It can be inferred that in the Utrecht University experiment, one group of people was "aimlessly clicking around" because:

Difficulty : Moderate **Average Time : 217 Seconds**

Options :

1. the other group was carrying out the tasks more efficiently.
2. they did not have the skill-set to address complicated tasks.
3. they were hoping that the software would help carry out the tasks.
4. they wanted to avoid making mistakes.

Solution :

The correct answer is **Option 3** i.e. **they were hoping that the software would help carry out the tasks.**

Option 1, Option 2 and **Option 4** are incorrect as they are not having the key ideas of the given statement in the question.

Option 3 is correct as according to the passage, the people using the more advanced software would often aimlessly click around when confronted with a tricky problem as "the supposedly helpful software actually short-circuited their thinking and learning". They were, in effect, hoping that the software would help carry out the tasks.

Hence, according to the question option 3 is correct.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. As software improves, the people using it become less likely to sharpen their own know-how. Applications that offer lots of prompts and tips are often to blame; simpler, less solicitous programs push people harder to think, act and learn. Ten years ago, information scientists at Utrecht University in the Netherlands had a group of people carry out complicated analytical and planning tasks using either rudimentary software that provided no assistance or sophisticated software that offered a great deal of aid. The researchers found that the people using the simple software developed better strategies, made fewer mistakes and developed a deeper aptitude for the work. The people using the more advanced software, meanwhile, would often "aimlessly click around" when confronted with a tricky problem. The supposedly helpful software actually short-circuited their thinking and learning. [According to] philosopher Hubert Dreyfus . . . . our skills get sharper only through practice, when we use them regularly to overcome different sorts of difficult challenges. The goal of modern software, by contrast, is to ease our way through such challenges. Arduous, painstaking work is exactly what programmers are most eager to automate—after all, that is where the immediate efficiency gains tend to lie. In other words, a fundamental tension ripples between the interests of the people doing the automation and the interests of the people doing the work. Nevertheless, automation's scope continues to widen. With the rise of electronic health records, physicians increasingly rely on software templates to guide them through patient exams. The programs incorporate valuable checklists and alerts, but they also make medicine more routinized and formulaic—and distance doctors from their patients . . . . Harvard Medical School professor Beth Lown, in a 2012 journal article . . . warned that when doctors become "screen-driven," following a computer's prompts rather than "the patient's narrative thread," their thinking can become constricted. In the worst cases, they may miss important diagnostic signals. . . . In a recent paper published in the journal Diagnosis, three medical researchers . . . examined the misdiagnosis of Thomas Eric Duncan, the first person to die of Ebola in the U.S., at Texas Health Presbyterian Hospital Dallas. They argue that the digital templates used by the hospital's clinicians to record patient information probably helped to induce a kind of tunnel vision. "These highly constrained tools," the researchers write, "are optimized for data capture but at the expense of sacrificing their utility for appropriate triage and diagnosis, leading users to miss the forest for the trees." Medical software, they write, is no "replacement for basic history-taking, examination skills, and critical thinking." . . . There is an alternative. In "human-centered automation," the talents of people take precedence . . . . In this model, software plays an essential but secondary role. It takes over routine functions that a human operator has already mastered, issues alerts when unexpected situations arise, provides fresh information that expands the operator's perspective and counters the biases that often distort human thinking. The technology becomes the expert's partner, not the expert's replacement.

Question 11 :

From the passage, we can infer that the author is apprehensive about the use of sophisticated automation for all of the following reasons EXCEPT that:

Difficulty : Moderate | **Average Time : 213 Seconds**

Options :

1. it could mislead people.

it stops users from exercising their minds.

3. computers could replace humans.
4. it stunts the development of its users.

Solution :
The correct answer is **Option 3** i.e. **computers could replace humans.**

Option 1, Option 2 and **Option 4** are incorrect as the author says that with the use of sophisticated automation, "the people using it become less likely to sharpen their own know-how", "their thinking can become constricted" and that "in the worst cases, they may miss important diagnostic signals". So these options are inferred.

Option 3 is correct as nowhere in the passage does the author express the fear that computers could replace humans.

Hence, according to the question option 3 is correct.

Comprehension :
The passage below is accompanied by a set of questions. Choose the best answer to each question. As software improves, the people using it become less likely to sharpen their own know-how. Applications that offer lots of prompts and tips are often to blame; simpler, less solicitous programs push people harder to think, act and learn. Ten years ago, information scientists at Utrecht University in the Netherlands had a group of people carry out complicated analytical and planning tasks using either rudimentary software that provided no assistance or sophisticated software that offered a great deal of aid. The researchers found that the people using the simple software developed better strategies, made fewer mistakes and developed a deeper aptitude for the work. The people using the more advanced software, meanwhile, would often "aimlessly click around" when confronted with a tricky problem. The supposedly helpful software actually short-circuited their thinking and learning. [According to] philosopher Hubert Dreyfus . . . . our skills get sharper only through practice, when we use them regularly to overcome different sorts of difficult challenges. The goal of modern software, by contrast, is to ease our way through such challenges. Arduous, painstaking work is exactly what programmers are most eager to automate—after all, that is where the immediate efficiency gains tend to lie. In other words, a fundamental tension ripples between the interests of the people doing the automation and the interests of the people doing the work. Nevertheless, automation's scope continues to widen. With the rise of electronic health records, physicians increasingly rely on software templates to guide them through patient exams. The programs incorporate valuable checklists and alerts, but they also make medicine more routinized and formulaic—and distance doctors from their patients . . . . Harvard Medical School professor Beth Lown, in a 2012 journal article . . . warned that when doctors become "screen-driven," following a computer's prompts rather than "the patient's narrative thread," their thinking can become constricted. In the worst cases, they may miss important diagnostic signals. . . . In a recent paper published in the journal Diagnosis, three medical researchers . . . examined the misdiagnosis of Thomas Eric Duncan, the first person to die of Ebola in the U.S., at Texas Health Presbyterian Hospital Dallas. They argue that the digital templates used by the hospital's clinicians to record patient information probably helped to induce a kind of tunnel vision. "These highly constrained tools," the researchers

write, “are optimized for data capture but at the expense of sacrificing their utility for appropriate triage and diagnosis, leading users to miss the forest for the trees.” Medical software, they write, is no “replacement for basic history-taking, examination skills, and critical thinking.” . . . There is an alternative. In “human-centered automation,” the talents of people take precedence . . . . In this model, software plays an essential but secondary role. It takes over routine functions that a human operator has already mastered, issues alerts when unexpected situations arise, provides fresh information that expands the operator’s perspective and counters the biases that often distort human thinking. The technology becomes the expert’s partner, not the expert’s replacement.

Question 12 :

In the context of the passage, all of the following can be considered examples of human-centered automation EXCEPT:

Difficulty : Moderate | **Average Time : 206 Seconds**

Options :

1. a smart-home system that changes the temperature as instructed by the resident.
2. software that offers interpretations when requested by the human operator.
3. medical software that provides optional feedback on the doctor’s analysis of the medical situation.
4. software that auto-completes text when the user writes an email.

Solution :

The correct answer is **Option 4** i.e. **software that auto-completes text when the user writes an email.**

Option 1, Option 2 and **Option 3** are incorrect as in the last paragraph, the passage explains how human-centered automation works: "It takes over routine functions that a human operator has already mastered, issues alerts when unexpected situations arise, provides fresh information that expands the operator's perspective and counters the biases that often distort human thinking.Options 1, 2 and 3 relate to such functions.

Option 4 is correct in the fourth paragraph, the passage warns that software prompts that guide patient exams can constrict doctors' thinking. Auto-completion of text is also prompt by software. This is the kind of automation the passage speaks out against.

Hence, according to the question option 4 is correct.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. Nature has all along yielded her flesh to humans. First, we took nature’s materials as food, fibers, and shelter. Then we learned to extract raw materials from her biosphere to create our own new synthetic materials. Now Bios is yielding us her mind—we are taking her logic. Clockwork logic—the logic of the machines—will only build simple contraptions. Truly complex systems such as

a cell, a meadow, an economy, or a brain (natural or artificial) require a rigorous nontechnological logic. We now see that no logic except bio-logic can assemble a thinking device, or even a workable system of any magnitude. It is an astounding discovery that one can extract the logic of Bios out of biology and have something useful. Although many philosophers in the past have suspected one could abstract the laws of life and apply them elsewhere, it wasn't until the complexity of computers and human-made systems became as complicated as living things, that it was possible to prove this. It's eerie how much of life can be transferred. So far, some of the traits of the living that have successfully been transported to mechanical systems are: self replication, self-governance, limited self-repair, mild evolution, and partial learning. We have reason to believe yet more can be synthesized and made into something new. Yet at the same time that the logic of Bios is being imported into machines, the logic of Technos is being imported into life. The root of bioengineering is the desire to control the organic long enough to improve it. Domesticated plants and animals are examples of technos-logic applied to life. The wild aromatic root of the Queen Anne's lace weed has been fine-tuned over generations by selective herb gatherers until it has evolved into a sweet carrot of the garden; the udders of wild bovines have been selectively enlarged in a "unnatural" way to satisfy humans rather than calves. Milk cows and carrots, therefore, are human inventions as much as steam engines and gunpowder are. But milk cows and carrots are more indicative of the kind of inventions humans will make in the future: products that are grown rather than manufactured. Genetic engineering is precisely what cattle breeders do when they select better strains of Holsteins, only bioengineers employ more precise and powerful control. While carrot and milk cow breeders had to rely on diffuse organic evolution, modern genetic engineers can use directed artificial evolution—purposeful design—which greatly accelerates improvements. The overlap of the mechanical and the lifelike increases year by year. Part of this bionic convergence is a matter of words. The meanings of "mechanical" and "life" are both stretching until all complicated things can be perceived as machines, and all self-sustaining machines can be perceived as alive. Yet beyond semantics, two concrete trends are happening: (1) Human-made things are behaving more lifelike, and (2) Life is becoming more engineered. The apparent veil between the organic and the manufactured has crumpled to reveal that the two really are, and have always been, of one being.

Question 13 :

Which one of the following sets of words/phrases best serves as keywords to the passage?

Difficulty : Moderate | **Average Time : 222 Seconds**

Options :

1. Complex systems; Bio-logic; Bioengineering; Technos-logic; Convergence
2. Nature; Bios; Technos; Self-repair; Holsteins
3. Nature; Computers; Carrots; Milk cows; Genetic engineering
4. Complex systems; Carrots; Milk cows; Convergence; Technos-logic

Solution :

The correct is answer is **Option 1** i.e**. Complex systems; Bio-logic; Bioengineering; Technos-logic; Convergence.**

Option 1 is correct as the convergence of bio-logic and technos-logic is the main idea of the passage and Option 1 contains all important keywords.

Option 2, Option 3 and **Option 4** are incorrect as they contain words like carrots and Hosteins which are not keyword.

Hence, the correct answer is option 1.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. Nature has all along yielded her flesh to humans. First, we took nature's materials as food, fibers, and shelter. Then we learned to extract raw materials from her biosphere to create our own new synthetic materials. Now Bios is yielding us her mind—we are taking her logic. Clockwork logic—the logic of the machines—will only build simple contraptions. Truly complex systems such as a cell, a meadow, an economy, or a brain (natural or artificial) require a rigorous nontechnological logic. We now see that no logic except bio-logic can assemble a thinking device, or even a workable system of any magnitude. It is an astounding discovery that one can extract the logic of Bios out of biology and have something useful. Although many philosophers in the past have suspected one could abstract the laws of life and apply them elsewhere, it wasn't until the complexity of computers and human-made systems became as complicated as living things, that it was possible to prove this. It's eerie how much of life can be transferred. So far, some of the traits of the living that have successfully been transported to mechanical systems are: self replication, self-governance, limited self-repair, mild evolution, and partial learning. We have reason to believe yet more can be synthesized and made into something new. Yet at the same time that the logic of Bios is being imported into machines, the logic of Technos is being imported into life. The root of bioengineering is the desire to control the organic long enough to improve it. Domesticated plants and animals are examples of technos-logic applied to life. The wild aromatic root of the Queen Anne's lace weed has been fine-tuned over generations by selective herb gatherers until it has evolved into a sweet carrot of the garden; the udders of wild bovines have been selectively enlarged in a "unnatural" way to satisfy humans rather than calves. Milk cows and carrots, therefore, are human inventions as much as steam engines and gunpowder are. But milk cows and carrots are more indicative of the kind of inventions humans will make in the future: products that are grown rather than manufactured. Genetic engineering is precisely what cattle breeders do when they select better strains of Holsteins, only bioengineers employ more precise and powerful control. While carrot and milk cow breeders had to rely on diffuse organic evolution, modern genetic engineers can use directed artificial evolution—purposeful design—which greatly accelerates improvements. The overlap of the mechanical and the lifelike increases year by year. Part of this bionic convergence is a matter of words. The meanings of "mechanical" and "life" are both stretching until all complicated things can be perceived as machines, and all self-sustaining machines can be perceived as alive. Yet beyond semantics, two concrete trends are happening: (1) Human-made things are behaving more lifelike, and (2) Life is becoming more engineered. The apparent veil between the organic and the manufactured has crumpled to reveal that the two really are, and have always been, of one being.

Question 14 :

None of the following statements is implied by the arguments of the passage, EXCEPT:

Difficulty : Moderate | **Average Time : 198 Seconds**

Options :

1. purposeful design represents the pinnacle of scientific expertise in the service of human betterment and civilisational progress.
2. the biological realm is as complex as the mechanical one; which is why the logic of Bios is being imported into machines.
3. historically, philosophers have known that the laws of life can be abstracted and applied elsewhere.
4. genetic engineers and bioengineers are the same insofar as they both seek to force evolution in an artificial way.

Solution :

The correct answer is **Option 4** i.e. **genetic engineers and bioengineers are the same insofar as they both seek to force evolution in an artificial way.**

Option 1 is incorrect as the passage says that directed artificial evolution or purposeful design is used by genetic engineers but it does not state or imply that this is "the pinnacle of scientific expertise".

Option 2 is incorrect as the passage clearly states that the logic of the Bios is more complex than the logic of machines.

Option 3 is incorrect as it says philosophers have known this, that according to the passage, many philosophers in the past have "suspected" one could abstract the laws of life and apply them elsewhere.

Option 4 is correct as it can be inferred from the passage based on the lines, "Genetic engineering is precisely what cattle breeders do when they select better strains of Holsteins, only bioengineers employ more precise and powerful control. While carrot and milk cow breeders had to rely on diffuse organic evolution, modern genetic engineers can use directed artificial evolution—purposeful design—which greatly accelerates improvements."

Hence, according to the question option 4 is correct.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. Nature has all along yielded her flesh to humans. First, we took nature’s materials as food, fibers, and shelter. Then we learned to extract raw materials from her biosphere to create our own new synthetic materials. Now Bios is yielding us her mind—we are taking her logic. Clockwork logic—the logic of the machines—will only build simple contraptions. Truly complex systems such as a cell, a meadow, an economy, or a brain (natural or artificial) require a rigorous nontechnological logic. We now see that no logic except bio-logic can assemble a thinking device, or even a workable system of any magnitude. It is an astounding discovery that one can extract the logic of Bios out of biology and have something useful. Although many philosophers in the past have suspected one could abstract the laws of life and apply them elsewhere, it wasn’t until the complexity of computers and human-made systems became as complicated as living things, that it was possible to prove this. It’s eerie how much of life can be transferred. So far, some of the traits of the living that have successfully been transported to mechanical systems are: self replication, self-governance, limited self-repair, mild evolution, and partial learning. We have reason to believe yet more can be synthesized and made into something new. Yet at the same time that the logic of Bios is

being imported into machines, the logic of Technos is being imported into life. The root of bioengineering is the desire to control the organic long enough to improve it. Domesticated plants and animals are examples of technos-logic applied to life. The wild aromatic root of the Queen Anne's lace weed has been fine-tuned over generations by selective herb gatherers until it has evolved into a sweet carrot of the garden; the udders of wild bovines have been selectively enlarged in a "unnatural" way to satisfy humans rather than calves. Milk cows and carrots, therefore, are human inventions as much as steam engines and gunpowder are. But milk cows and carrots are more indicative of the kind of inventions humans will make in the future: products that are grown rather than manufactured. Genetic engineering is precisely what cattle breeders do when they select better strains of Holsteins, only bioengineers employ more precise and powerful control. While carrot and milk cow breeders had to rely on diffuse organic evolution, modern genetic engineers can use directed artificial evolution—purposeful design—which greatly accelerates improvements. The overlap of the mechanical and the lifelike increases year by year. Part of this bionic convergence is a matter of words. The meanings of "mechanical" and "life" are both stretching until all complicated things can be perceived as machines, and all self-sustaining machines can be perceived as alive. Yet beyond semantics, two concrete trends are happening: (1) Human-made things are behaving more lifelike, and (2) Life is becoming more engineered. The apparent veil between the organic and the manufactured has crumpled to reveal that the two really are, and have always been, of one being.

Question 15 :

The author claims that, "The apparent veil between the organic and the manufactured has crumpled to reveal that the two really are, and have always been, of one being." Which one of the following statements best expresses the point being made by the author here?

Difficulty : Moderate | **Average Time : 256 Seconds**

Options :

1. Organic reality has crumpled under the veil of manufacturing, rendering the apparent and the real as the same being
2. The crumpling of the organic veil between apparent and manufactured reality reveals them to have the same being.
3. Apparent reality and organic reality are distinguished by the fact that the former is manufactured.
4. Scientific advances are making it increasingly difficult to distinguish between organic reality and manufactured reality.

Solution :

The correct answer is **Option 4** i.e. **Scientific advances are making it increasingly difficult to distinguish between organic reality and manufactured reality.**

Option 1, Option 2 and **Option 3** are incorrect as they cannot be completely inferred from the passage because they are not containing all the key ideas of the passage.

Option 4 is correct as the given statement implies that the lines demarking the organic and the manufactured have blurred and the two are and have always been the same. In other words, scientific advances are making it increasingly difficult to

distinguish between organic reality and manufactured reality.

Hence, according to the question option 4 is correct.

Comprehension :

The passage below is accompanied by a set of questions. Choose the best answer to each question. Nature has all along yielded her flesh to humans. First, we took nature's materials as food, fibers, and shelter. Then we learned to extract raw materials from her biosphere to create our own new synthetic materials. Now Bios is yielding us her mind—we are taking her logic. Clockwork logic—the logic of the machines—will only build simple contraptions. Truly complex systems such as a cell, a meadow, an economy, or a brain (natural or artificial) require a rigorous nontechnological logic. We now see that no logic except bio-logic can assemble a thinking device, or even a workable system of any magnitude. It is an astounding discovery that one can extract the logic of Bios out of biology and have something useful. Although many philosophers in the past have suspected one could abstract the laws of life and apply them elsewhere, it wasn't until the complexity of computers and human-made systems became as complicated as living things, that it was possible to prove this. It's eerie how much of life can be transferred. So far, some of the traits of the living that have successfully been transported to mechanical systems are: self replication, self-governance, limited self-repair, mild evolution, and partial learning. We have reason to believe yet more can be synthesized and made into something new. Yet at the same time that the logic of Bios is being imported into machines, the logic of Technos is being imported into life. The root of bioengineering is the desire to control the organic long enough to improve it. Domesticated plants and animals are examples of technos-logic applied to life. The wild aromatic root of the Queen Anne's lace weed has been fine-tuned over generations by selective herb gatherers until it has evolved into a sweet carrot of the garden; the udders of wild bovines have been selectively enlarged in a "unnatural" way to satisfy humans rather than calves. Milk cows and carrots, therefore, are human inventions as much as steam engines and gunpowder are. But milk cows and carrots are more indicative of the kind of inventions humans will make in the future: products that are grown rather than manufactured. Genetic engineering is precisely what cattle breeders do when they select better strains of Holsteins, only bioengineers employ more precise and powerful control. While carrot and milk cow breeders had to rely on diffuse organic evolution, modern genetic engineers can use directed artificial evolution—purposeful design—which greatly accelerates improvements. The overlap of the mechanical and the lifelike increases year by year. Part of this bionic convergence is a matter of words. The meanings of "mechanical" and "life" are both stretching until all complicated things can be perceived as machines, and all self-sustaining machines can be perceived as alive. Yet beyond semantics, two concrete trends are happening: (1) Human-made things are behaving more lifelike, and (2) Life is becoming more engineered. The apparent veil between the organic and the manufactured has crumpled to reveal that the two really are, and have always been, of one being.

Question 16 :

The author claims that, "Part of this bionic convergence is a matter of words". Which one of the following statements best expresses the point being made by the author?

Difficulty : Moderate | **Average Time : 225 Seconds**

Options :

A bionic convergence indicates the meeting ground of genetic engineering and artificial intelligence.

2. “Mechanical” and “life” were earlier seen as opposite in meaning, but the difference between the two is increasingly blurred.
3. “Bios” and “Technos” are both convergent forms of logic, but they generate meanings about the world that are mutually exclusive.
4. “Mechanical” and “life” are words from different logical systems and are, therefore, fundamentally incompatible in meaning.

Solution :
The correct answer is **Option 2** i.e. **"Mechanical" and "life" were earlier seen as opposite in meaning, but the difference between the two is increasingly blurred**.

Option 1, Option 3 and **Option 4** are incorrect as they are not fulling the key ideas which author asked for in the question.

Option 2 is correct as the author says that overlap of the mechanical and the lifelike increases year by year and that part of this bionic convergence is a matter of words. The point the author makes here is that the difference between the mechanical and the lifelike is becoming more and more blurred.

Hence, according to the question option 2 is correct.

Question 17 :
The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage. “It does seem to me that the job of comedy is to offend, or have the potential to offend, and it cannot be drained of that potential,” Rowan Atkinson said of cancel culture. “Every joke has a victim. That’s the definition of a joke. Someone or something or an idea is made to look ridiculous.” The Netflix star continued, “I think you’ve got to be very, very careful about saying what you’re allowed to make jokes about. You’ve always got to kick up? Really?” He added, “There are lots of extremely smug and self-satisfied people in what would be deemed lower down in society, who also deserve to be pulled up. In a proper free society, you should be allowed to make jokes about absolutely anything.”

Difficulty : Moderate | **Average Time : 122 Seconds**

Options :

1. Cancel culture does not understand the role and duty of comedians, which is to deride and mock everyone.
2. Every joke needs a victim and one needs to include people from lower down the society and not just the upper class.
3. All jokes target someone and one should be able to joke about anyone in the society, which is inconsistent with

cancel culture.

4. Victims of jokes must not only be politicians and royalty, but also arrogant people from lower classes should be mentioned by comedians.

Solution :
The correct answer is **Option 3** i.e. **All jokes target someone and one should be able to joke about anyone in the society, which is inconsistent with cancel culture.**

Option 1 is incorrect as the given quote does not talk of the 'role and duty' of comedians.

Option 2 while true, but it does not mention 'cancel culture' which is a key idea.So this is incorrect.

Option 3 is correct as it summarizes the paragraph well. Speaking of cancel culture, Rowan Atkinson says that every joke offends someone or something and so, in a proper free society, jokes about absolutely anything should be allowed.

Option 4 is incorrect as Victims of jokes must not only be politicians and royalty, but also arrogant people from lower classes should be mentioned by comedians.

Hence, according to the question option 3 is correct.

Question 18 :
The four sentences (labelled 1, 2, 3 and 4) below, when properly sequenced, would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer: [1] If I wanted to sit indoors and read, or play Sonic the Hedgehog on a red-hot Sega Mega Drive, I would often be made to feel guilty about not going outside to “enjoy it while it lasts”. [2] My mum, quite reasonably, wanted me and my sister out of the house, in the sun. [3] Tales of my mum’s idyllic-sounding childhood in the Sussex countryside, where trees were climbed by 8 am and streams navigated by lunchtime, were passed down to us like folklore. [4] To an introverted kid, that felt like a threat – and the feeling has stayed with me.

Difficulty : Moderate | **Average Time : 125 Seconds**

Solution :
The correct answer is **2314.**

2 and **3** is a link. The pronoun 'us' in **3** refers to 'me and my sister' in **2.**

1 and **4** is also a link: 'that felt like a threat' in **4** refers to 'enjoy it while it lasts' in **1**

Hence, according to the question **2314** is the correct answer.

Question 19 :
The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage. Tamsin Blanchard, curator of Fashion Open Studio, an initiative by a campaign group showcasing the work

of ethical designers says, “We’re all drawn to an exquisite piece of embroidery, a colourful textile or even a style of dressing that might have originated from another heritage. [But] this magpie mentality, where all of culture and history is up for grabs as ‘inspiration’, has accelerated since the proliferation of social media... Where once a fashion student might research the history and traditions of a particular item of clothing with care and respect, we now have a world where images are lifted from image libraries without a care for their cultural significance. It’s easier than ever to steal a motif or a craft technique and transfer it on to a piece of clothing that is either mass produced or appears on a runway without credit or compensation to their original communities.”

Difficulty : Moderate | **Average Time : 83 Seconds**

Options :

1. Copying an embroidery design or pattern of textile from native communities who own them is tantamount to stealing and they need to be compensated.
2. Cultural collaboration is the need of the hour. Beautiful design ideas of indigenous people need to be showcased and shared worldwide.
3. Taking fashion ideas from any cultural group without their consent is a form of appropriation without giving due credit, compensation, and respect.
4. Media has encouraged mass production; images are copied effortlessly without care or concern for the interests of ethnic communities.

Solution :

The correct answer is **Option 3** i.e. **Taking fashion ideas from any cultural group without their consent is a form of appropriation without giving due credit, compensation, and respect.**

Option 1 is incorrect as it does not worked well. It talks about copying an embroidery design or pattern of textile from native communities who ‘own' them. The ideas belong to a community, they are not ‘owned’ by them. Also, this option does not touch upon credit or respect that is owed to these communities.

Option 2 is incorrect as it talks of 'cultural collaboration', which is not what the given paragraph is about.

Option 3 is correct as the main idea expressed here is that the proliferation of social media has led to easy access to fashion ideas from different cultures and it is now easier than ever to unethically use these ideas or techniques without giving credit or compensation to the original communities. So this option captures the essence of the paragraph.

Option 4 is incorrect as it says that the media has 'encouraged mass production'.

Hence, according to the question option 3 is correct.

Question 20 :

The four sentences (labelled 1, 2, 3 and 4) below, when properly sequenced, would yield a coherent paragraph. Decide on

the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer: [1] Various industrial sectors including retail, transit systems, enterprises, educational institutions, event organizing, finance, travel etc. have now started leveraging these beacons solutions to track and communicate with their customers. [2] A beacon fixed on to a shop wall enables the retailer to assess the proximity of the customer, and come up with a much targeted or personalized communication like offers, discounts and combos on products in each shelf. [3] Smart phones or other mobile devices can capture the beacon signals, and distance can be estimated by measuring received signal strength. [4] Beacons are tiny and inexpensive, micro-location-based technology devices that can send radio frequency signals and notify nearby Bluetooth devices of their presence and transmit information.

Difficulty : Moderate **Average Time : 141 Seconds**

Solution :
The correct answer is **4312.**

4 introduces beacons and is the best starting sentence. **4** and **3** is a link: **4** states that beacons send radio frequency signals; **3** explains that smart phones and other mobile devices capture these signals.

1 and **2** is also a link: **1** says that several industrial sectors have begun to use beacons to track and communicate with their customers; **2** explains how these beacons are actually put to use to track this information.

Hence, according to the question correct answer is 4312.

Question 21 :
The passage given below is followed by four alternate summaries. Choose the option that best captures the essence of the passage. To defend the sequence of alphabetisation may seem bizarre, so obvious is its application that it is hard to imagine a reference, catalogue or listing without it. But alphabetical order was not an immediate consequence of the alphabet itself. In the Middle Ages, deference for ecclesiastical tradition left scholars reluctant to categorise things according to the alphabet — to do so would be a rejection of the divine order. The rediscovery of the ancient Greek and Roman classics necessitated more efficient ways of ordering, searching and referencing texts. Government bureaucracy in the 16th and 17th centuries quickened the advance of alphabetical order, bringing with it pigeonholes, notebooks and card indexes.

Difficulty : Moderate **Average Time : 76 Seconds**

Options :
1. The alphabetic order took several centuries to gain common currency because of religious beliefs and a lack of appreciation of its efficacy in the ordering of things.
2. Unlike the alphabet, once the efficacy of the alphabetic sequence became apparent to scholars and administrators, its use became widespread.
3. The ban on the use by scholars of any form of categorisation - but the divinely ordained one - delayed the adoption

of the alphabetic sequence by several centuries.

4. While adoption of the written alphabet was easily accomplished, it took scholars several centuries to accept the alphabetic sequence as a useful tool in their work.

Solution :

The correct answer is **Option 1** i.e. **The alphabetic order took several centuries to gain common currency because of religious beliefs and a lack of appreciation of its efficacy in the ordering of things.**

Option 1 is correct as according to the given paragraph, alphabetical order was not an immediate consequence of the alphabet itself. Religious beliefs led to the rejection of alphabetical order in the Middle Ages and it was only with the need for more efficient ways of ordering and referencing texts as well as the need to deal with government bureaucracy in the 16th and 17th centuries that alphabetical order became popular. So this option captures all key ideas and summarizes the paragraph well.

Option 2 is incorrect as it states that 'unlike the alphabet', the use of the alphabetic sequence became widespread once its efficacy became known. This is not what the paragraph given says

Option 3 incorrect as it says there was a 'ban' on the use of any form of categorisation but a divinely ordained one. This is not what the paragraph given says. Further, religious beliefs hindering the widespread adoption of alphabetical order is just one idea in the given paragraph.

Option 4 is incorrect as it says that the adoption of the written alphabet was easily accomplished. This is something the paragraph given does not touch upon.

Hence, according to the question option 1 is correct.

Question 22 :

There is a sentence that is missing in the paragraph below. Look at the paragraph and decide in which blank (option 1, 2, 3, or 4) the following sentence would best fit. Sentence: This has meant a lot of uncertainty around what a wide-scale return to office might look like in practice. Paragraph: Bringing workers back to their desks has been a rocky road for employers and employees alike. The evolution of the pandemic has meant that best laid plans have often not materialised. ____(1)____ The flow of workers back into offices has been more of a trickle than a steady stream. ____(2)____ Yet while plenty of companies are still working through their new policies, some employees across the globe are now back at their desks, whether on a full-time or hybrid basis. ____(3)____ That means we're beginning to get some clarity on what return-to-office means – what's working, as well as what has yet to be settled. ____(4)____

Difficulty : Moderate | **Average Time : 158 Seconds**

Options :

1. Option 1

Option 2

3. Option 3
4. Option 4

Solution :
The correct asnwer is **Option 2.**

Option 1 is incorrect although Both option 1 and 2 look like possibilities as 'this has meant a lot of uncertainty' can apply equally well to the sentence before each of these options. But looking at the sentence that follows and the flow of ideas, it does not gets fit in option 1.

Option 2 is correct as workers are returning in a trickle, rather than a steady stream--there is hence uncertainty about what a wide scale return to office might look like--yet, even as companies are still working on their new policies, employees are getting back at their desks on a full-time or hybrid basis and hence, the given sentence makes better sense in option 2.

Option 3 is incorrect as the line before says some employees are now returning to their desks. The given sentence does not make sense here.

Option 4 is incorrect as the sentence before says clarity is emerging, so the missing sentence, which is about uncertainty prevailing cannot be put in here.

Hence, according to the question option 2 is correct.

Question 23 :
There is a sentence that is missing in the paragraph below. Look at the paragraph and decide in which blank (option 1, 2, 3, or 4) the following sentence would best fit. Sentence: When people socially learn from each other, they often learn without understanding why what they're copying—the beliefs and behaviours and technologies and know-how—works. Paragraph: ____(1)____. The dual-inheritance theory ....says....that inheritance is itself an evolutionary system. It has variation. What makes us a new kind of animal, and so different and successful as a species, is we rely heavily on social learning, to the point where socially acquired information is effectively a second line of inheritance, the first being our genes.... ____(2)____. People tend to home in on who seems to be the smartest or most successful person around, as well as what everybody seems to be doing—the majority of people have something worth learning. ____(3)____. When you repeat this process over time, you can get, around the world, cultural packages—beliefs or behaviours or technology or other solutions—that are adapted to the local conditions. People have different psychologies, effectively. ____(4)____.

Difficulty : Moderate **Average Time : 126 Seconds**

Options :

1. Option 1
2. Option 2

Option 3

4. Option 4

Solution :
The correct answer is **Option 2.**

Option 1 is incorrect as after reading we can see that the missing sentence does not make a good starting sentence.

Option 2 is correct as this is the best place to fit the given sentence. The previous sentence talks about 'socially acquired information'. The given sentence explains how people socially learn from each other. The next sentence adds to this idea of learning from people around.

Option 3 is incorrect as the flow of ideas in case of option 3 is already smooth. The majority of people have something worth learning from the people around them and when this learning process is repeated over time, you can get cultural packages adapted to local conditions.

Option 4 is incorrect as after reading the passage we can see that the missing sentence does not make a conclusion to the paragraph.

Hence, according to the question option 2 is correct.

Question 24 :
The four sentences (labelled 1, 2, 3 and 4) below, when properly sequenced, would yield a coherent paragraph. Decide on the proper sequencing of the order of the sentences and key in the sequence of the four numbers as your answer: [1] The more we are able to accept that our achievements are largely out of our control, the easier it becomes to understand that our failures, and those of others, are too. [2] But the raft of recent books about the limits of merit is an important correction to the arrogance of contemporary entitlement and an opportunity to reassert the importance of luck, or grace, in our thinking. [3] Meritocracy as an organising principle is an inevitable function of a free society, as we are designed to see our achievements as worthy of reward. [4] And that in turn should increase our humility and the respect with which we treat our fellow citizens, helping ultimately to build a more compassionate society.

Difficulty : Moderate **Average Time : 111 Seconds**

Solution :
The correct answer is **3214.**

3 is the most general statement and hence the best one to start the paragraph.

3 and **2** is a link:

3 states that we are designed to see our achievements as worthy of reward;

2 talks about a raft of recent books that throw light on the limits of this kind of thinking.

2and **1** is a link, with **1** adding to the point made in **2** about the limits of merit and how understanding this can help us become more accepting.

4 follows **1** and concludes the paragraph with how this, in turn, will help build a more compassionate society.

Hence, according to the question 3214 is correct.

Comprehension :
All the first-year students in the computer science (CS) department in a university take both the courses (i) AI and (ii) ML. Students from other departments (non-CS students) can also take one of these two courses, but not both. Students who fail in a course get an F grade; others pass and are awarded A or B or C grades depending on their performance. The following are some additional facts about the number of students who took these two courses this year and the grades they obtained. 1. The numbers of non-CS students who took AI and ML were in the ratio 2 : 5. 2. The number of non-CS students who took either AI or ML was equal to the number of CS students. 3. The numbers of non-CS students who failed in the two courses were the same and their total is equal to the number of CS students who got a C grade in ML. 4. In both the courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML. 5. No CS student failed in AI, while no non-CS student got an A grade in AI. 6. The numbers of CS students who got A, B and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio was 4 : 5 : 2. 7. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 8. 30 students failed in ML.

Question 25 :
How many students took AI?

Difficulty : Moderate | **Average Time : 123 Seconds**

Options :

1. 90
2. 60
3. 270
4. 210

Solution :
The correct answer is **Option 3** i.e. **270**.

Let's break down the given information step by step to answer each of the questions:

Given Information:

1. The number of non-CS students who took AI and ML was in the ratio 2 : 5. Let's denote the number of non-CS students who took AI as 2x and the number who took ML as 5x.

2. The number of non-CS students who took either AI or ML was equal to the number of CS students. The number of non-CS students who failed in the two courses was the same and their total is equal to the number of CS students who got a C grade in ML.

3. In both courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML.

4. No CS student failed in AI, while no non-CS student got an A grade in AI. This means that all CS students passed AI, and no non-CS student got an A grade in AI.
The numbers of CS students who got A, B, and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio was 4 : 5 : 2.

5. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 30 students failed in ML. The number of students who failed in both AI and ML among non-CS students is also 30.

CS	A	B	C	F
AI	3y	5y	2y	0
ML	4x	5x	2x	2x/3
Non-CS	A	B	C	F
AI	0			x
ML				x

From fact 8, 2x/3 + x = 30 gives x = 18

So total no of CS ML students = 72 + 90 + 36 + 12 = 210

Also, total no of CS AI students = 210

Now, 3y + 5y + 2y = 210 gives y = 21

So, the no of non-CS AI students = 60 and non-CS Ml students = 105

From fact 4, the number of students who got a grade B in ML = (72 + 90 + 36 + 150 -18) ÷ 2 = 330 ÷ 2 = 165

Similarly, the no of students who got a grade B in AI = 126

Let the number of students of non-CS students who got a grade A in the ML course be a.

Then no of non-CS students who got C grade in ML = 150 - 75 - a - 18 = 57 - a

From fact 4, (72 + a)/(36 + 57 -a) = 3/2

144 + 2a = 279 = 3a

5a = 135

a = 27

Total	CS	A	B	C	F
210	AI	63	105	42	0
210	ML	72	90	36	12
	Non-CS	A	B	C	F
60	AI	0	21	21	18
150	ML	27	75	30	18

Number of students who took AI = 210 + 60 = 270.

Hence, **270** is the correct answer.

Comprehension :

All the first-year students in the computer science (CS) department in a university take both the courses (i) AI and (ii) ML. Students from other departments (non-CS students) can also take one of these two courses, but not both. Students who fail in a course get an F grade; others pass and are awarded A or B or C grades depending on their performance. The following are some additional facts about the number of students who took these two courses this year and the grades they obtained. 1. The numbers of non-CS students who took AI and ML were in the ratio 2 : 5. 2. The number of non-CS students who took either AI or ML was equal to the number of CS students. 3. The numbers of non-CS students who failed in the two courses were the same and their total is equal to the number of CS students who got a C grade in ML. 4. In both the courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML. 5. No CS student failed in AI, while no non-CS student got an A grade in AI. 6. The numbers of CS students who got A, B and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio was 4 : 5 : 2. 7. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 8. 30 students failed in ML.

Question 26 :

How many CS students failed in ML?

Difficulty : Moderate **Average Time : 265 Seconds**

Solution :

The correct answer is **12**.

Let's break down the given information step by step to answer each of the questions:

Given Information:

1. The number of non-CS students who took AI and ML was in the ratio 2 : 5. Let's denote the number of non-CS students who took AI as 2x and the number who took ML as 5x.

2. The number of non-CS students who took either AI or ML was equal to the number of CS students. The number of non-CS students who failed in the two courses was the same and their total is equal to the number of CS students who got a C grade in ML.

3. In both courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML.

4. No CS student failed in AI, while no non-CS student got an A grade in AI. This means that all CS students passed AI, and no non-CS student got an A grade in AI.
The numbers of CS students who got A, B, and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio was 4 : 5 : 2.

5. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 30 students failed in ML. The number of students who failed in both AI and ML among non-CS students is also 30.

CS	A	B	C	F
AI	3y	5y	2y	0
ML	4x	5x	2x	2x/3
Non-CS	A	B	C	F
AI	0			x
ML				x

From fact 8, 2x/3 + x = 30 gives x = 18

So total no of CS ML students = 72 + 90 + 36 + 12 = 210

Also, total no of CS AI students = 210

Now, 3y + 5y + 2y = 210 gives y = 21

So, the no of non-CS AI students = 60 and non-CS Ml students = 105

From fact 4, the number of students who got a grade B in ML = (72 + 90 + 36 + 150 -18) ÷ 2 = 330 ÷ 2 = 165

Similarly, the no of students who got a grade B in AI = 126

Let the number of students of non-CS students who got a grade A in the ML course be a.

Then no of non-CS students who got C grade in ML = 150 - 75 - a - 18 = 57 - a

From fact 4, (72 + a)/(36 + 57 -a) = 3/2

144 + 2a = 279 = 3a

5a = 135

a = 27

Total	CS	A	B	C	F
210	AI	63	105	42	0
210	ML	72	90	36	12
	Non-CS	A	B	C	F
60	AI	0	21	21	18
150	ML	27	75	30	18

A number of CS students who failed in ML is 12.

Hence, **12** is the correct answer.

Comprehension :

All the first-year students in the computer science (CS) department in a university take both the courses (i) AI and (ii) ML. Students from other departments (non-CS students) can also take one of these two courses, but not both. Students who fail in a course get an F grade; others pass and are awarded A or B or C grades depending on their performance. The following are some additional facts about the number of students who took these two courses this year and the grades they obtained. 1. The numbers of non-CS students who took AI and ML were in the ratio 2 : 5. 2. The number of non-CS students who took either AI or ML was equal to the number of CS students. 3. The numbers of non-CS students who failed in the two courses were the same and their total is equal to the number of CS students who got a C grade in ML. 4. In both the courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML. 5. No CS student failed in AI, while no non-CS student got an A grade in AI. 6. The numbers of CS students who got A, B and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio was 4 : 5 : 2. 7. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 8. 30 students failed in ML.

Question 27 :

How many non-CS students got A grade in ML?

Difficulty : Moderate

Average Time : 257 Seconds

Solution :

The correct answer is**27**

Let's break down the given information step by step to answer each of the questions:

Given Information:

1. The number of non-CS students who took AI and ML was in the ratio 2 : 5. Let's denote the number of non-CS students who took AI as 2x and the number who took ML as 5x.

2. The number of non-CS students who took either AI or ML was equal to the number of CS students. The number of non-CS students who failed in the two courses was the same and their total is equal to the number of CS students who got a C grade in ML.

3. In both courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML.

4. No CS student failed in AI, while no non-CS student got an A grade in AI. This means that all CS students passed AI, and no non-CS student got an A grade in AI.
The numbers of CS students who got A, B, and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio was 4 : 5 : 2.

5. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 30 students failed in ML. The number of students who failed in both AI and ML among non-CS students is also 30.

CS	A	B	C	F
AI	3y	5y	2y	0
ML	4x	5x	2x	2x/3
Non-CS	A	B	C	F
AI	0			x
ML				x

From fact 8, 2x/3 + x = 30 gives x = 18

So total no of CS ML students = 72 + 90 + 36 + 12 = 210

Also, total no of CS AI students = 210

Now, 3y + 5y + 2y = 210 gives y = 21

So, the no of non-CS AI students = 60 and non-CS Ml students = 105

From fact 4, the number of students who got a grade B in ML = (72 + 90 + 36 + 150 -18) ÷ 2 = 330 ÷ 2 = 165

Similarly, the no of students who got a grade B in AI = 126

Let the number of students of non-CS students who got a grade A in the ML course be a.

Then no of non-CS students who got C grade in ML = 150 - 75 - a - 18 = 57 - a

From fact 4, (72 + a)/(36 + 57 -a) = 3/2

144 + 2a = 279 = 3a

5a = 135

a = 27

Total	CS	A	B	C	F
210	AI	63	105	42	0
210	ML	72	90	36	12
	Non-CS	A	B	C	F
60	AI	0	21	21	18
150	ML	27	75	30	18

The number of non-CS students who got A grade in ML is 27.

Hence, **27** is the correct answer.

Comprehension :

All the first-year students in the computer science (CS) department in a university take both the courses (i) AI and (ii) ML. Students from other departments (non-CS students) can also take one of these two courses, but not both. Students who fail in a course get an F grade; others pass and are awarded A or B or C grades depending on their performance. The following are some additional facts about the number of students who took these two courses this year and the grades they obtained. 1. The numbers of non-CS students who took AI and ML were in the ratio 2 : 5. 2. The number of non-CS students who took either AI or ML was equal to the number of CS students. 3. The numbers of non-CS students who failed in the two courses were the same and their total is equal to the number of CS students who got a C grade in ML. 4. In both the courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML. 5. No CS student failed in AI, while no non-CS student got an A grade in AI. 6. The numbers of CS students who got A, B and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio was 4 : 5 : 2. 7. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 8. 30 students failed in ML.

Question 28 :

How many students got A grade in AI?

Difficulty : Moderate

Average Time : 257 Seconds

Options :

1. 63
2. 99
3. 84
4. 42

Solution :

The correct answer is **Option 1** i.e. **63**.

Let's break down the given information step by step to answer each of the questions:

Given Information:

1. The number of non-CS students who took AI and ML was in the ratio 2 : 5. Let's denote the number of non-CS students who took AI as 2x and the number who took ML as 5x.

2. The number of non-CS students who took either AI or ML was equal to the number of CS students. The number of non-CS students who failed in the two courses was the same and their total is equal to the number of CS students who got a C grade in ML.

3. In both courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML.

4. No CS student failed in AI, while no non-CS student got an A grade in AI. This means that all CS students passed AI, and no non-CS student got an A grade in AI.
The numbers of CS students who got A, B, and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio was 4 : 5 : 2.

5. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 30 students failed in ML. The number of students who failed in both AI and ML among non-CS students is also 30.

CS	A	B	C	F
AI	3y	5y	2y	0
ML	4x	5x	2x	2x/3
Non-CS	A	B	C	F

AI	0			x
ML				x

From fact 8, 2x/3 + x = 30 gives x = 18

So total no of CS ML students = 72 + 90 + 36 + 12 = 210

Also, total no of CS AI students = 210

Now, 3y + 5y + 2y = 210 gives y = 21

So, the no of non-CS AI students = 60 and non-CS Ml students = 105

From fact 4, the number of students who got a grade B in ML = (72 + 90 + 36 + 150 -18) ÷ 2 = 330 ÷ 2 = 165

Similarly, the no of students who got a grade B in AI = 126

Let the number of students of non-CS students who got a grade A in the ML course be a.

Then no of non-CS students who got C grade in ML = 150 - 75 - a - 18 = 57 - a

From fact 4, (72 + a)/(36 + 57 -a) = 3/2

144 + 2a = 279 = 3a

5a = 135

a = 27

Total	CS	A	B	C	F
210	AI	63	105	42	0
210	ML	72	90	36	12
	Non-CS	A	B	C	F
60	AI	0	21	21	18
150	ML	27	75	30	18

The number of students who got A grade in AI is 63 + 0 = 63.

Hence, **63** is the correct answer.

Comprehension :

All the first-year students in the computer science (CS) department in a university take both the courses (i) AI and (ii) ML. Students from other departments (non-CS students) can also take one of these two courses, but not both. Students who fail in a course get an F grade; others pass and are awarded A or B or C grades depending on their performance. The

following are some additional facts about the number of students who took these two courses this year and the grades they obtained. 1. The numbers of non-CS students who took AI and ML were in the ratio 2 : 5. 2. The number of non-CS students who took either AI or ML was equal to the number of CS students. 3. The numbers of non-CS students who failed in the two courses were the same and their total is equal to the number of CS students who got a C grade in ML. 4. In both the courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML. 5. No CS student failed in AI, while no non-CS student got an A grade in AI. 6. The numbers of CS students who got A, B and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio was 4 : 5 : 2. 7. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 8. 30 students failed in ML.

Question 29 :

How many non-CS students got B grade in ML?

Difficulty : Moderate **Average Time : 267 Seconds**

Options :

1. 165
2. 75
3. 25
4. 90

Solution :

The correct answer is **Option 2** i.e. **75**.

Let's break down the given information step by step to answer each of the questions:

Given Information:

1. The number of non-CS students who took AI and ML was in the ratio 2 : 5. Let's denote the number of non-CS students who took AI as 2x and the number who took ML as 5x.

2. The number of non-CS students who took either AI or ML was equal to the number of CS students. The number of non-CS students who failed in the two courses was the same and their total is equal to the number of CS students who got a C grade in ML.

3. In both courses, 50% of the students who passed got a B grade. But, while the numbers of students who got A and C grades were the same for AI, they were in the ratio 3 : 2 for ML.

4. No CS student failed in AI, while no non-CS student got an A grade in AI. This means that all CS students passed AI, and no non-CS student got an A grade in AI.
The numbers of CS students who got A, B, and C grades respectively in AI were in the ratio 3 : 5 : 2, while in ML the ratio

was 4 : 5 : 2.

5. The ratio of the total number of non-CS students failing in one of the two courses to the number of CS students failing in one of the two courses was 3 : 1. 30 students failed in ML. The number of students who failed in both AI and ML among non-CS students is also 30.

CS	A	B	C	F
AI	3y	5y	2y	0
ML	4x	5x	2x	2x/3
Non-CS	A	B	C	F
AI	0			x
ML				x

From fact 8, 2x/3 + x = 30 gives x = 18

So total no of CS ML students = 72 + 90 + 36 + 12 = 210

Also, total no of CS AI students = 210

Now, 3y + 5y + 2y = 210 gives y = 21

So, the no of non-CS AI students = 60 and non-CS Ml students = 105

From fact 4, the number of students who got a grade B in ML = (72 + 90 + 36 + 150 -18) ÷ 2 = 330 ÷ 2 = 165

Similarly, the no of students who got a grade B in AI = 126

Let the number of students of non-CS students who got a grade A in the ML course be a.

Then no of non-CS students who got C grade in ML = 150 - 75 - a - 18 = 57 - a

From fact 4, (72 + a)/(36 + 57 -a) = 3/2

144 + 2a = 279 = 3a

5a = 135

a = 27

Total	CS	A	B	C	F
210	AI	63	105	42	0
210	ML	72	90	36	12

	Non-CS	A	B	C	F
60	AI	0	21	21	18
150	ML	27	75	30	18

The number of non-CS students who got B grade in ML is 75.

Hence, **75** is the correct answer.

Comprehension :

In the following, a year corresponds to 1st of January of that year. A study to determine the mortality rate for a disease began in 1980. The study chose 1000 males and 1000 females and followed them for forty years or until they died, whichever came first. The 1000 males chosen in 1980 consisted of 250 each of ages 10 to less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The 1000 females chosen in 1980 also consisted of 250 each of ages 10 to less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The four figures below depict the age profile of those among the 2000 individuals who were still alive in 1990, 2000, 2010, and 2020. The blue bars in each figure represent the number of males in each age group at that point in time, while the pink bars represent the number of females in each age group at that point in time. The numbers next to the bars give the exact numbers being represented by the bars. For example, we know that 230 males among those tracked and who were alive in 1990 were aged between 20 and 30.

Question 30 :

In 2000, what was the ratio of the number of dead males to dead females among those being tracked?

Difficulty : Moderate **Average Time : 249 Seconds**

Options :

1. 41 : 43
2. 71 : 69
3. 109 : 107
4. 129 : 131

Solution :

The correct answer is **Option 2** i.e. **71 : 69**

According to the given information in question, the table below shows the age profile of those among 2000 individuals who were still alive in 1990, 2000, 2010, and 2020:

Males	Females

Age Group	**10-20**	**20-30**	**30-40**	**40-50**	**Age Group**	**10-20**	**20-30**	**30-4-**	**40-50**
1980	250	250	250	250	1980	250	250	250	250
Age Group	**20-30**	**30-40**	**40-50**	**50-60**	**Age Group**	**20-30**	**30-40**	**40-50**	**50-60**
1990	230	235	210	190	1990	240	225	190	220
Age Group	**30-40**	**40-50**	**50-60**	**60-70**	**Age Group**	**30-40**	**40-50**	**50-60**	**60-70**
2000	180	205	160	100	2000	210	175	150	120
Age Group	**40-50**	**50-60**	**60-70**	**70-80**	**Age Group**	**40-50**	**50-60**	**60-70**	**70-80**
2010	150	165	90	25	2010	160	145	100	30
Age Group	**50-60**	**60-70**	**70-80**	**80-90**	**Age Group**	**50-60**	**60-70**	**70-80**	**80-90**
2020	140	125	50	5	2020	100	105	60	18

In 2020, the number of dead males
= 1000 – (180 + 205 + 160 + 100) = 355
In 2020, the number of dead females
= 1000 – (210 + 175 + 150 + 120) = 345
Hence, the required ratio = 355 : 345 = 71 : 69.

Hence, **71 : 69** is the correct answer.

Comprehension :
In the following, a year corresponds to 1st of January of that year. A study to determine the mortality rate for a disease began in 1980. The study chose 1000 males and 1000 females and followed them for forty years or until they died, whichever came first. The 1000 males chosen in 1980 consisted of 250 each of ages 10 to less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The 1000 females chosen in 1980 also consisted of 250 each of ages 10 to less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The four figures below depict the age profile of those among the 2000 individuals who were still alive in 1990, 2000, 2010, and 2020. The blue bars in each figure represent the number of males in each age group at that point in time, while the pink bars represent the number of females in each age group at that point in time. The numbers next to the bars give the exact numbers being represented by the bars. For example, we know that 230 males among those tracked and who were alive in 1990 were aged between 20 and 30.

Question 31 :
How many people who were being tracked and who were between 30 and 40 years of age in 1980 survived until 2010?

Difficulty : Moderate **Average Time : 200 Seconds**

Options :

1. 310
2. 110
3. 190
4. 90

Solution :

The correct answer is **Option 3** i.e. **190**

According to the given information in question, the table below shows the age profile of those among 2000 individuals who were still alive in 1990, 2000, 2010, and 2020:

Males					Females				
Age Group	**10-20**	**20-30**	**30-40**	**40-50**	**Age Group**	**10-20**	**20-30**	**30-4-**	**40-50**
1980	250	250	250	250	1980	250	250	250	250
Age Group	**20-30**	**30-40**	**40-50**	**50-60**	**Age Group**	**20-30**	**30-40**	**40-50**	**50-60**
1990	230	235	210	190	1990	240	225	190	220
Age Group	**30-40**	**40-50**	**50-60**	**60-70**	**Age Group**	**30-40**	**40-50**	**50-60**	**60-70**
2000	180	205	160	100	2000	210	175	150	120
Age Group	**40-50**	**50-60**	**60-70**	**70-80**	**Age Group**	**40-50**	**50-60**	**60-70**	**70-80**
2010	150	165	90	25	2010	160	145	100	30
Age Group	**50-60**	**60-70**	**70-80**	**80-90**	**Age Group**	**50-60**	**60-70**	**70-80**	**80-90**
2020	140	125	50	5	2020	100	105	60	18

The number of people who were being tracked and who were between 30 and 40 years of age in 1980 survived until 2010 = 90 + 100 = 190.

Hence, **190** is the correct answer.

Comprehension :

In the following, a year corresponds to 1st of January of that year. A study to determine the mortality rate for a disease began in 1980. The study chose 1000 males and 1000 females and followed them for forty years or until they died, whichever came first. The 1000 males chosen in 1980 consisted of 250 each of ages 10 to less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The 1000 females chosen in 1980 also consisted of 250 each of ages 10 to

less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The four figures below depict the age profile of those among the 2000 individuals who were still alive in 1990, 2000, 2010, and 2020. The blue bars in each figure represent the number of males in each age group at that point in time, while the pink bars represent the number of females in each age group at that point in time. The numbers next to the bars give the exact numbers being represented by the bars. For example, we know that 230 males among those tracked and who were alive in 1990 were aged between 20 and 30.

Question 32 :

How many individuals who were being tracked and who were less than 30 years of age in 1980 survived until 2020?

Difficulty : Moderate **Average Time : 199 Seconds**

Options :

1. 470
2. 240
3. 230
4. 580

Solution :

The correct answer is **Option 1** i.e. **470**

According to the given information in question, the table below shows the age profile of those among 2000 individuals who were still alive in 1990, 2000, 2010, and 2020:

Males					Females				
Age Group	**10-20**	**20-30**	**30-40**	**40-50**	**Age Group**	**10-20**	**20-30**	**30-4-**	**40-50**
1980	250	250	250	250	1980	250	250	250	250
Age Group	**20-30**	**30-40**	**40-50**	**50-60**	**Age Group**	**20-30**	**30-40**	**40-50**	**50-60**
1990	230	235	210	190	1990	240	225	190	220
Age Group	**30-40**	**40-50**	**50-60**	**60-70**	**Age Group**	**30-40**	**40-50**	**50-60**	**60-70**
2000	180	205	160	100	2000	210	175	150	120
Age Group	**40-50**	**50-60**	**60-70**	**70-80**	**Age Group**	**40-50**	**50-60**	**60-70**	**70-80**
2010	150	165	90	25	2010	160	145	100	30

Age Group	50-60	60-70	70-80	80-90	Age Group	50-60	60-70	70-80	80-90
2020	140	125	50	5	2020	100	105	60	18

The number of individuals who were being tracked and who were less than 30 years of age in 1980 survived until 2020 = 140 + 125 + 100 + 105 = 470.

Hence, **470** is the correct answer.

Comprehension :

In the following, a year corresponds to 1st of January of that year. A study to determine the mortality rate for a disease began in 1980. The study chose 1000 males and 1000 females and followed them for forty years or until they died, whichever came first. The 1000 males chosen in 1980 consisted of 250 each of ages 10 to less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The 1000 females chosen in 1980 also consisted of 250 each of ages 10 to less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The four figures below depict the age profile of those among the 2000 individuals who were still alive in 1990, 2000, 2010, and 2020. The blue bars in each figure represent the number of males in each age group at that point in time, while the pink bars represent the number of females in each age group at that point in time. The numbers next to the bars give the exact numbers being represented by the bars. For example, we know that 230 males among those tracked and who were alive in 1990 were aged between 20 and 30.

Question 33 :

How many of the males who were being tracked and who were between 20 and 30 years of age in 1980 died in the period 2000 to 2010?

Difficulty : Moderate **Average Time : 200 Seconds**

Solution :

The correct answer is **40**

According to the given information in question, the table below shows the age profile of those among 2000 individuals who were still alive in 1990, 2000, 2010, and 2020:

Males					Females				
Age Group	**10-20**	**20-30**	**30-40**	**40-50**	**Age Group**	**10-20**	**20-30**	**30-4-**	**40-50**
1980	250	250	250	250	1980	250	250	250	250
Age Group	**20-30**	**30-40**	**40-50**	**50-60**	**Age Group**	**20-30**	**30-40**	**40-50**	**50-60**
1990	230	235	210	190	1990	240	225	190	220
Age Group	**30-40**	**40-50**	**50-60**	**60-70**	**Age Group**	**30-40**	**40-50**	**50-60**	**60-70**

2000	180	205	160	100	2000	210	175	150	120
Age Group	**40-50**	**50-60**	**60-70**	**70-80**	**Age Group**	**40-50**	**50-60**	**60-70**	**70-80**
2010	150	165	90	25	2010	160	145	100	30
Age Group	**50-60**	**60-70**	**70-80**	**80-90**	**Age Group**	**50-60**	**60-70**	**70-80**	**80-90**
2020	140	125	50	5	2020	100	105	60	18

The number of the males who were being tracked and who were between 20 and 30 years of age in 1980 died in the period 2000 to 2010 = 205 – 165 = 40.

Hence, **40** is the correct answer.

Comprehension :

In the following, a year corresponds to 1st of January of that year. A study to determine the mortality rate for a disease began in 1980. The study chose 1000 males and 1000 females and followed them for forty years or until they died, whichever came first. The 1000 males chosen in 1980 consisted of 250 each of ages 10 to less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The 1000 females chosen in 1980 also consisted of 250 each of ages 10 to less than 20, 20 to less than 30, 30 to less than 40, and 40 to less than 50. The four figures below depict the age profile of those among the 2000 individuals who were still alive in 1990, 2000, 2010, and 2020. The blue bars in each figure represent the number of males in each age group at that point in time, while the pink bars represent the number of females in each age group at that point in time. The numbers next to the bars give the exact numbers being represented by the bars. For example, we know that 230 males among those tracked and who were alive in 1990 were aged between 20 and 30.

Question 34 :

How many of the females who were being tracked and who were between 20 and 30 years of age in 1980 died between the ages of 50 and 60?

Difficulty : Moderate **Average Time : 191 Seconds**

Solution :

The correct answer is **30**

According to the given information in question, the table below shows the age profile of those among 2000 individuals who were still alive in 1990, 2000, 2010, and 2020:

Males					Females				
Age Group	**10-20**	**20-30**	**30-40**	**40-50**	**Age Group**	**10-20**	**20-30**	**30-4-**	**40-50**

1980	250	250	250	250	1980	250	250	250	250
Age Group	**20-30**	**30-40**	**40-50**	**50-60**	**Age Group**	**20-30**	**30-40**	**40-50**	**50-60**
1990	230	235	210	190	1990	240	225	190	220
Age Group	**30-40**	**40-50**	**50-60**	**60-70**	**Age Group**	**30-40**	**40-50**	**50-60**	**60-70**
2000	180	205	160	100	2000	210	175	150	120
Age Group	**40-50**	**50-60**	**60-70**	**70-80**	**Age Group**	**40-50**	**50-60**	**60-70**	**70-80**
2010	150	165	90	25	2010	160	145	100	30
Age Group	**50-60**	**60-70**	**70-80**	**80-90**	**Age Group**	**50-60**	**60-70**	**70-80**	**80-90**
2020	140	125	50	5	2020	100	105	60	18

The number of the females who were being tracked and who were between 20 and 30 years of age in 1980 died between the ages of 50 and 60 = 175 – 145 = 30.

Hence, **30** is the correct answer.

Comprehension :

There are only four neighbourhoods in a city - Levmisto, Tyhrmisto, Pesmisto and Kitmisto. During the onset of a pandemic, the number of new cases of a disease in each of these neighbourhoods was recorded over a period of five days. On each day, the number of new cases recorded in any of the neighbourhoods was either 0, 1, 2 or 3. The following facts are also known: 1. There was at least one new case in every neighbourhood on Day 1. 2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto. 3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2. 4. The maximum number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period. 5. Kitmisto is the only place to have 3 new cases on Day 2. 6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto and Kitmisto over the five-day period were 12, 12, 5 and 14 respectively.

Question 35 :

What BEST can be concluded about the total number of new cases in the city on Day 2?

Difficulty : Moderate **Average Time : 190 Seconds**

Options :

Either 7 or 8

2. Either 6 or 7
3. Exactly 7
4. Exactly 8

Solution :
The correct answer is **Option 4** i.e. **Exactly 8**

According to the given information,

1. There was at least one new case in every neighbourhood on Day 1.

This means that each neighbourhood had at least 1 new case on Day 1.

2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto.

This implies that the number of new cases in Kitmisto is always greater than in Pesmisto on all five days.

3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2.

This indicates that the number of new cases in the city was increasing sequentially from Day 1 to Day 5.

4. The maximum number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period.

This tells us that Pesmisto had 2 new cases on only one day during the five-day period.

5. Kitmisto is the only place to have 3 new cases on Day 2.

This means, on Day 2, Kitmisto had 3 new cases.

6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto, and Kitmisto over the five-day period were 12, 12, 5, and 14 respectively.

This provides the total number of new cases for each neighbourhood over the five days

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto						12
	Tyhrmisto						12
Kitmisto > Pesmisto	Pesmisto						5

Kitmisto		3				14	
		0	n	> n + 1			

Now,

Since the total number of new cases in Kitmisto over five days is 14, and Kitmisto had 3 new cases on Day 2, Kitmisto must have had 2 new cases on the other four days (to make a total of 14). So, on Days 1, 3, 4, and 5, Kitmisto had 2 new cases each day.

Since the total number of new cases in Tyhrmisto over five days is 12, Tyhrmisto cannot have more than 2 new cases on any single day. Therefore, Tyhrmisto had 2 new cases on each of the five days.

We know that Pesmisto had 2 new cases on only one day during the five-day period. Therefore, Pesmisto must have had 0 new cases on all other days to keep the total number of new cases in Pesmisto at 5.

Levmisto had 12 new cases over five days, so it had 3 new cases each day.

Sum 14 is possible only in 3, 3, 3, 3, 2. The maximum sum for Day 5 will be 3 + 3 + 2 + 3 = 11.

Sum of 12 + 12 + 5 + 14 = 43

Sum for Day 4 = 10, Sum for Day 3 = 9, Sum for Day 2 = 8 and Sum for Day 1 = 5

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto	1	2	3	3	3	12
	Tyhrmisto	1	2	3	3	3	12
Kitmisto > Pesmisto	Pesmisto	1	1	0	1	2	5
	Kitmisto	2	3	3	3	3	14
		5	8	9	10	11	43

The total number of new cases in the city on Day 2 was 8.

Hence, **Exactly 8** is the correct answer.

Comprehension :
There are only four neighbourhoods in a city - Levmisto, Tyhrmisto, Pesmisto and Kitmisto. During the onset of a pandemic, the number of new cases of a disease in each of these neighbourhoods was recorded over a period of five days. On each day, the number of new cases recorded in any of the neighbourhoods was either 0, 1, 2 or 3. The following facts are also known: 1. There was at least one new case in every neighbourhood on Day 1. 2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto. 3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2. 4. The maximum

number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period. 5. Kitmisto is the only place to have 3 new cases on Day 2. 6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto and Kitmisto over the five-day period were 12, 12, 5 and 14 respectively.

Question 36 :

What BEST can be concluded about the number of new cases in Levmisto on Day 3?

Difficulty : Moderate **Average Time : 269 Seconds**

Options :

1. Exactly 2
2. Either 2 or 3
3. Either 0 or 1
4. Exactly 3

Solution :

The correct answer is **Option 4** i.e. **Exactly 3**

According to the given information,

1. There was at least one new case in every neighbourhood on Day 1.

This means that each neighbourhood had at least 1 new case on Day 1.

2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto.

This implies that the number of new cases in Kitmisto is always greater than in Pesmisto on all five days.

3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2.

This indicates that the number of new cases in the city was increasing sequentially from Day 1 to Day 5.

4. The maximum number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period.

This tells us that Pesmisto had 2 new cases on only one day during the five-day period.

5. Kitmisto is the only place to have 3 new cases on Day 2.

This means, on Day 2, Kitmisto had 3 new cases.

6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto, and Kitmisto over the five-day period were 12, 12, 5, and 14 respectively.

This provides the total number of new cases for each neighbourhood over the five days

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto						12
	Tyhrmisto						12
Kitmisto > Pesmisto	Pesmisto						5
	Kitmisto		3				14
		0	n	> n + 1			

Now,

Since the total number of new cases in Kitmisto over five days is 14, and Kitmisto had 3 new cases on Day 2, Kitmisto must have had 2 new cases on the other four days (to make a total of 14). So, on Days 1, 3, 4, and 5, Kitmisto had 2 new cases each day.

Since the total number of new cases in Tyhrmisto over five days is 12, Tyhrmisto cannot have more than 2 new cases on any single day. Therefore, Tyhrmisto had 2 new cases on each of the five days.

We know that Pesmisto had 2 new cases on only one day during the five-day period. Therefore, Pesmisto must have had 0 new cases on all other days to keep the total number of new cases in Pesmisto at 5.

Levmisto had 12 new cases over five days, so it had 3 new cases each day.

Sum 14 is possible only in 3, 3, 3, 3, 2. The maximum sum for Day 5 will be 3 + 3 + 2 + 3 = 11.

Sum of 12 + 12 + 5 + 14 = 43

Sum for Day 4 = 10, Sum for Day 3 = 9, Sum for Day 2 = 8 and Sum for Day 1 = 5

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto	1	2	3	3	3	12
	Tyhrmisto	1	2	3	3	3	12
Kitmisto > Pesmisto	Pesmisto	1	1	0	1	2	5
	Kitmisto	2	3	3	3	3	14
		5	8	9	10	11	43

The number of new cases in Levmisto on Day 3 was 3.

Hence, **Exactly 3** is the correct answer.

Comprehension :

There are only four neighbourhoods in a city - Levmisto, Tyhrmisto, Pesmisto and Kitmisto. During the onset of a pandemic, the number of new cases of a disease in each of these neighbourhoods was recorded over a period of five days. On each day, the number of new cases recorded in any of the neighbourhoods was either 0, 1, 2 or 3. The following facts are also known: 1. There was at least one new case in every neighbourhood on Day 1. 2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto. 3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2. 4. The maximum number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period. 5. Kitmisto is the only place to have 3 new cases on Day 2. 6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto and Kitmisto over the five-day period were 12, 12, 5 and 14 respectively.

Question 37 :

On which day(s) did Pesmisto not have any new case?

Difficulty : Moderate **Average Time : 267 Seconds**

Options :

1. Both Day 2 and Day 3
2. Only Day 3
3. Both Day 2 and Day 4
4. Only Day 2

Solution :

The correct answer is **Option 2** i.e. **Only Day 3**

According to the given information,

1. There was at least one new case in every neighbourhood on Day 1.

This means that each neighbourhood had at least 1 new case on Day 1.

2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto.

This implies that the number of new cases in Kitmisto is always greater than in Pesmisto on all five days.

3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2.

This indicates that the number of new cases in the city was increasing sequentially from Day 1 to Day 5.

4. The maximum number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period.

This tells us that Pesmisto had 2 new cases on only one day during the five-day period.

5. Kitmisto is the only place to have 3 new cases on Day 2.

This means, on Day 2, Kitmisto had 3 new cases.

6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto, and Kitmisto over the five-day period were 12, 12, 5, and 14 respectively.

This provides the total number of new cases for each neighbourhood over the five days

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto						12
	Tyhrmisto						12
Kitmisto > Pesmisto	Pesmisto						5
	Kitmisto		3				14
		0	n	> n + 1			

Now,

Since the total number of new cases in Kitmisto over five days is 14, and Kitmisto had 3 new cases on Day 2, Kitmisto must have had 2 new cases on the other four days (to make a total of 14). So, on Days 1, 3, 4, and 5, Kitmisto had 2 new cases each day.

Since the total number of new cases in Tyhrmisto over five days is 12, Tyhrmisto cannot have more than 2 new cases on any single day. Therefore, Tyhrmisto had 2 new cases on each of the five days.

We know that Pesmisto had 2 new cases on only one day during the five-day period. Therefore, Pesmisto must have had 0 new cases on all other days to keep the total number of new cases in Pesmisto at 5.

Levmisto had 12 new cases over five days, so it had 3 new cases each day.

Sum 14 is possible only in 3, 3, 3, 3, 2. The maximum sum for Day 5 will be 3 + 3 + 2 + 3 = 11.

Sum of 12 + 12 + 5 + 14 = 43

Sum for Day 4 = 10, Sum for Day 3 = 9, Sum for Day 2 = 8 and Sum for Day 1 = 5

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto	1	2	3	3	3	12
	Tyhrmisto	1	2	3	3	3	12

Kitmisto > Pesmisto	Pesmisto	1	1	0	1	2	5
	Kitmisto	2	3	3	3	3	14
		5	8	9	10	11	43

Only on Day 3 Pesmisto did not have any new case.

Hence, **Only Day 3** is the correct answer.

Comprehension :

There are only four neighbourhoods in a city - Levmisto, Tyhrmisto, Pesmisto and Kitmisto. During the onset of a pandemic, the number of new cases of a disease in each of these neighbourhoods was recorded over a period of five days. On each day, the number of new cases recorded in any of the neighbourhoods was either 0, 1, 2 or 3. The following facts are also known: 1. There was at least one new case in every neighbourhood on Day 1. 2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto. 3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2. 4. The maximum number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period. 5. Kitmisto is the only place to have 3 new cases on Day 2. 6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto and Kitmisto over the five-day period were 12, 12, 5 and 14 respectively.

Question 38 :

Which of the two statements below is/are necessarily false? Statement A: There were 2 new cases in Tyhrmisto on Day 3. Statement B: There were no new cases in Pesmisto on Day 2.

Difficulty : Moderate **Average Time : 274 Seconds**

Options :

1. Neither Statement A nor Statement B
2. Statement B only
3. Both Statement A and Statement B
4. Statement A only

Solution :

The correct answer is **Option 3** i.e. **Both Statement A and Statement B**

According to the given information,

1. There was at least one new case in every neighbourhood on Day 1.

This means that each neighbourhood had at least 1 new case on Day 1.

2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto.

This implies that the number of new cases in Kitmisto is always greater than in Pesmisto on all five days.

3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2.

This indicates that the number of new cases in the city was increasing sequentially from Day 1 to Day 5.

4. The maximum number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period.

This tells us that Pesmisto had 2 new cases on only one day during the five-day period.

5. Kitmisto is the only place to have 3 new cases on Day 2.

This means, on Day 2, Kitmisto had 3 new cases.

6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto, and Kitmisto over the five-day period were 12, 12, 5, and 14 respectively.

This provides the total number of new cases for each neighbourhood over the five days

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto						12
	Tyhrmisto						12
Kitmisto > Pesmisto	Pesmisto						5
	Kitmisto		3				14
		0	n	> n + 1			

Now,

Since the total number of new cases in Kitmisto over five days is 14, and Kitmisto had 3 new cases on Day 2, Kitmisto must have had 2 new cases on the other four days (to make a total of 14). So, on Days 1, 3, 4, and 5, Kitmisto had 2 new cases each day.

Since the total number of new cases in Tyhrmisto over five days is 12, Tyhrmisto cannot have more than 2 new cases on any single day. Therefore, Tyhrmisto had 2 new cases on each of the five days.

We know that Pesmisto had 2 new cases on only one day during the five-day period. Therefore, Pesmisto must have had 0 new cases on all other days to keep the total number of new cases in Pesmisto at 5.

Levmisto had 12 new cases over five days, so it had 3 new cases each day.

Sum 14 is possible only in 3, 3, 3, 3, 2. The maximum sum for Day 5 will be 3 + 3 + 2 + 3 = 11.

Sum of 12 + 12 + 5 + 14 = 43

Sum for Day 4 = 10, Sum for Day 3 = 9, Sum for Day 2 = 8 and Sum for Day 1 = 5

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto	1	2	3	3	3	12
	Tyhrmisto	1	2	3	3	3	12
Kitmisto > Pesmisto	Pesmisto	1	1	0	1	2	5
	Kitmisto	2	3	3	3	3	14
		5	8	9	10	11	43

Both Statement A and Statement B are necessarily false.

Hence, **Both Statement A and Statement B** is the correct answer.

Comprehension :

There are only four neighbourhoods in a city - Levmisto, Tyhrmisto, Pesmisto and Kitmisto. During the onset of a pandemic, the number of new cases of a disease in each of these neighbourhoods was recorded over a period of five days. On each day, the number of new cases recorded in any of the neighbourhoods was either 0, 1, 2 or 3. The following facts are also known: 1. There was at least one new case in every neighbourhood on Day 1. 2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto. 3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2. 4. The maximum number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period. 5. Kitmisto is the only place to have 3 new cases on Day 2. 6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto and Kitmisto over the five-day period were 12, 12, 5 and 14 respectively.

Question 39 :

On how many days did Levmisto and Tyhrmisto have the same number of new cases?

Difficulty : Moderate **Average Time : 274 Seconds**

Options :

1. 4
2. 5
3. 2

3

Solution :
The correct answer is **Option 2** i.e. **5**

According to the given information,

1. There was at least one new case in every neighbourhood on Day 1.

This means that each neighbourhood had at least 1 new case on Day 1.

2. On each of the five days, there were more new cases in Kitmisto than in Pesmisto.

This implies that the number of new cases in Kitmisto is always greater than in Pesmisto on all five days.

3. The number of new cases in the city in a day kept increasing during the five-day period. The number of new cases on Day 3 was exactly one more than that on Day 2.

This indicates that the number of new cases in the city was increasing sequentially from Day 1 to Day 5.

4. The maximum number of new cases in a day in Pesmisto was 2, and this happened only once during the five-day period.

This tells us that Pesmisto had 2 new cases on only one day during the five-day period.

5. Kitmisto is the only place to have 3 new cases on Day 2.

This means, on Day 2, Kitmisto had 3 new cases.

6. The total numbers of new cases in Levmisto, Tyhrmisto, Pesmisto, and Kitmisto over the five-day period were 12, 12, 5, and 14 respectively.

This provides the total number of new cases for each neighbourhood over the five days

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto						12
	Tyhrmisto						12
Kitmisto > Pesmisto	Pesmisto						5
	Kitmisto		3				14

		0	n	> n + 1			

Now,

Since the total number of new cases in Kitmisto over five days is 14, and Kitmisto had 3 new cases on Day 2, Kitmisto must have had 2 new cases on the other four days (to make a total of 14). So, on Days 1, 3, 4, and 5, Kitmisto had 2 new cases each day.

Since the total number of new cases in Tyhrmisto over five days is 12, Tyhrmisto cannot have more than 2 new cases on any single day. Therefore, Tyhrmisto had 2 new cases on each of the five days.

We know that Pesmisto had 2 new cases on only one day during the five-day period. Therefore, Pesmisto must have had 0 new cases on all other days to keep the total number of new cases in Pesmisto at 5.

Levmisto had 12 new cases over five days, so it had 3 new cases each day.

Sum 14 is possible only in 3, 3, 3, 3, 2. The maximum sum for Day 5 will be 3 + 3 + 2 + 3 = 11.

Sum of 12 + 12 + 5 + 14 = 43

Sum for Day 4 = 10, Sum for Day 3 = 9, Sum for Day 2 = 8 and Sum for Day 1 = 5

	Neighbourhood	Day 1	Day 2	Day 3	Day 4	Day 5	Total
	Levmisto	1	2	3	3	3	12
	Tyhrmisto	1	2	3	3	3	12
Kitmisto > Pesmisto	Pesmisto	1	1	0	1	2	5
	Kitmisto	2	3	3	3	3	14
		5	8	9	10	11	43

All 5 days Levmisto and Tyhrmisto have the same number of new cases.

Hence, **5** is the correct answer.

Comprehension :
Pulak, Qasim, Ritesh, and Suresh participated in a tournament comprising of eight rounds. In each round, they formed two pairs, with each of them being in exactly one pair. The only restriction in the pairing was that the pairs would change in successive rounds. For example, if Pulak formed a pair with Qasim in the first round, then he would have to form a pair with Ritesh or Suresh in the second round. He would be free to pair with Qasim again in the third round. In each round, each pair decided whether to play the game in that round or not. If they decided not to play, then no money was

exchanged between them. If they decided to play, they had to bet either â‚¹1 or â‚¹2 in that round. For example, if they chose to bet â‚¹2, then the player winning the game got â‚¹2 from the one losing the game. At the beginning of the tournament, the players had â‚¹10 each. The following table shows partial information about the amounts that the players had at the end of each of the eight rounds. It shows every time a player had â‚¹10 at the end of a round, as well as every time, at the end of a round, a player had either the minimum or the maximum amount that he would have had across the eight rounds. For example, Suresh had â‚¹10 at the end of Rounds 1, 3, and 8 and not after any of the other rounds. The maximum amount that he had at the end of any round was â‚¹13 (at the end of Round 5), and the minimum amount he had at the end of any round was â‚¹8 (at the end of Round 2). At the end of all other rounds, he must have had either â‚¹9, â‚¹11, or â‚¹12. It was also known that Pulak and Qasim had the same amount of money with them at the end of Round 4 Pulak Qasim Ritesh Suresh Round 1 Rs.8 Rs.10 Rs.10 Round 2 Rs.13 Rs.10 Rs.8 Round 3 Rs.10 Round 4 Round 5 Rs.10 Rs.10 Rs.13 Round 6 Round 7 Rs.12 Rs.4 Round 8 Rs.13 Rs.10

Question 40 :

What BEST can be said about the amount of money that Ritesh had with him at the end of Round 8?

Difficulty : Moderate **Average Time : 316 Seconds**

Options :

1. â‚¹4 or â‚¹5
2. Exactly â‚¹5
3. Exactly â‚¹6
4. â‚¹5 or â‚¹6

Solution :

The correct answer is **Option 3** i.e. **Exactly â‚¹6**

- In this game, only exchanges of Rs 2, Rs 1, or Rs 0 can occur.
- Consecutive exchanges between the same two persons are not allowed.
- The total amount after each exchange always remains at Rs 40.
- For rounds 1, 2, and 5, vacant places can be filled using this information.
- Maximum and minimum amounts are specified in the table.
- Conclusions for all remaining exchanges: Pulak can have Rs 12 or Rs 11. Qasim can have Rs 9 or Rs 11. Ritesh can have Rs 5, Rs 6, Rs 7, Rs 8, or Rs 9. Suresh can have Rs 9, Rs 11, or Rs 12.
- In round 8, Qasim and Ritesh together have Rs 17.
- Qasim can only have Rs 11 or Rs 9. If he has Rs 9, then Ritesh will have Rs 8, which is not possible.
- After round 8, Qasim and Ritesh have Rs 11 and Rs 6, respectively.
- In round 8, Ritesh witnessed an increase of 2 and Qasim a decrease of 1.
- Consequently, Pulak must have had an increase of 1 (otherwise, for a decrease of 3, he should have had Rs 15

after round 7, which is not possible).

- Suresh must have had a decrease of 2.
- After round 7, the respective amounts with Pulak, Qasim, Ritesh, and Suresh will be Rs 12, Rs 12, Rs 4, and Rs 12.
- In round 5 Pulak and Qasim have increased by 1 so obviously Ritesh and Suresh's amounts will be decreased by 1. Hence, their respective amounts are Rs 6 and Rs 12.
- After round 6 Qasim's amount has to be Rs 11(it cannot be 9 as in round 7 Qasim's amount is Rs 12, an increase of 3 from Rs 9 will be a contradiction).
- Now Ritesh's Rs 5 is a decrease of 2, so an increase of Rs 2 can happen only with Pulak making his amount equal to Rs 12. Hence, Suresh will have Rs 12 at the end of Round 6.

Based on the given information we can complete the table as follows:

Round	Pulak (Rs 10)	Qasim (Rs 10)	Ritesh (Rs 10)	Suresh (Rs 10)	Cash exchange between
Round 1	Rs 12	Rs 8	Rs 10	Rs 10	P-Q, R-S
Round 2	Rs 13	Rs 10	Rs 9	Rs 8	P-R, Q-S
Round 3	Rs 11	Rs 11	Rs 8	Rs 10	P-S, Q-R
Round 4	Rs 11	Rs 11	Rs 6	Rs 12	P-Q, R-S
Round 5	Rs 10	Rs 10	Rs 7	Rs 13	P-S, Q-R
Round 6	Rs 12	Rs 11	Rs 5	Rs 12	P-R, Q-S
Round 7	Rs 12	Rs 12	Rs 4	Rs 12	P-S, Q-R
Round 8	Rs 13	Rs 11	Rs 6	Rs 10	P-Q, R-S

Ritesh had exactly Rs.6 at the end of Round 8.

Hence, **Exactly â‚¹6** is the correct answer.

Comprehension :

Pulak, Qasim, Ritesh, and Suresh participated in a tournament comprising of eight rounds. In each round, they formed two pairs, with each of them being in exactly one pair. The only restriction in the pairing was that the pairs would change in successive rounds. For example, if Pulak formed a pair with Qasim in the first round, then he would have to form a pair with Ritesh or Suresh in the second round. He would be free to pair with Qasim again in the third round. In each round, each pair decided whether to play the game in that round or not. If they decided not to play, then no money was exchanged between them. If they decided to play, they had to bet either â‚¹1 or â‚¹2 in that round. For example, if they chose to bet â‚¹2, then the player winning the game got â‚¹2 from the one losing the game. At the beginning of the tournament, the players had â‚¹10 each. The following table shows partial information about the amounts that the players had at the end of each of the eight rounds. It shows every time a player had â‚¹10 at the end of a round, as well as every time, at the end of a round, a player had either the minimum or the maximum amount that he would have had across the eight rounds. For example, Suresh had â‚¹10 at the end of Rounds 1, 3, and 8 and not after any of the other rounds. The maximum amount that he had at the end of any round was â‚¹13 (at the end of Round 5), and the minimum amount he had at the end of any round was â‚¹8 (at the end of Round 2). At the end of all other rounds, he must have had either â‚¹9, â‚¹11, or â‚¹12. It was also known that Pulak and Qasim had the same amount of money with them at the end of Round 4.
Pulak Qasim Ritesh Suresh Round 1 Rs.8 Rs.10 Rs.10 Round 2 Rs.13 Rs.10 Rs.8 Round 3 Rs.10 Round 4 Round 5 Rs.10 Rs.10 Rs.13 Round 6 Round 7 Rs.12 Rs.4 Round 8 Rs.13 Rs.10

Question 41 :
What BEST can be said about the amount of money that Pulak had with him at the end of Round 6?

Difficulty : Moderate **Average Time : 271 Seconds**

Options :

1. Exactly â‚¹12
2. â‚¹11 or â‚¹12
3. â‚¹12 or â‚¹13
4. Exactly â‚¹11

Solution :
The correct answer is **Option 1** i.e. **Exactly â‚¹12**

- In this game, only exchanges of Rs 2, Rs 1, or Rs 0 can occur.
- Consecutive exchanges between the same two persons are not allowed.
- The total amount after each exchange always remains at Rs 40.
- For rounds 1, 2, and 5, vacant places can be filled using this information.
- Maximum and minimum amounts are specified in the table.
- Conclusions for all remaining exchanges: Pulak can have Rs 12 or Rs 11. Qasim can have Rs 9 or Rs 11. Ritesh can have Rs 5, Rs 6, Rs 7, Rs 8, or Rs 9. Suresh can have Rs 9, Rs 11, or Rs 12.

In round 8, Qasim and Ritesh together have Rs 17.

- Qasim can only have Rs 11 or Rs 9. If he has Rs 9, then Ritesh will have Rs 8, which is not possible.
- After round 8, Qasim and Ritesh have Rs 11 and Rs 6, respectively.
- In round 8, Ritesh witnessed an increase of 2 and Qasim a decrease of 1.
- Consequently, Pulak must have had an increase of 1 (otherwise, for a decrease of 3, he should have had Rs 15 after round 7, which is not possible).
- Suresh must have had a decrease of 2.
- After round 7, the respective amounts with Pulak, Qasim, Ritesh, and Suresh will be Rs 12, Rs 12, Rs 4, and Rs 12.
- In round 5 Pulak and Qasim have increased by 1 so obviously Ritesh and Suresh's amounts will be decreased by 1. Hence, their respective amounts are Rs 6 and Rs 12.
- After round 6 Qasim's amount has to be Rs 11(it cannot be 9 as in round 7 Qasim's amount is Rs 12, an increase of 3 from Rs 9 will be a contradiction).
- Now Ritesh's Rs 5 is a decrease of 2, so an increase of Rs 2 can happen only with Pulak making his amount equal to Rs 12. Hence, Suresh will have Rs 12 at the end of Round 6.

Based on the given information we can complete the table as follows:

Round	Pulak (Rs 10)	Qasim (Rs 10)	Ritesh (Rs 10)	Suresh (Rs 10)	Cash exchange between
Round 1	Rs 12	Rs 8	Rs 10	Rs 10	P-Q, R-S
Round 2	Rs 13	Rs 10	Rs 9	Rs 8	P-R, Q-S
Round 3	Rs 11	Rs 11	Rs 8	Rs 10	P-S, Q-R
Round 4	Rs 11	Rs 11	Rs 6	Rs 12	P-Q, R-S
Round 5	Rs 10	Rs 10	Rs 7	Rs 13	P-S, Q-R
Round 6	Rs 12	Rs 11	Rs 5	Rs 12	P-R, Q-S
Round 7	Rs 12	Rs 12	Rs 4	Rs 12	P-S, Q-R

Round 8	Rs 13	Rs 11	Rs 6	Rs 10	P-Q, R-S

Pulak had exactly Rs.12 at the end of Round 6.

Hence, **Exactly â‚¹12** is the correct answer.

Comprehension :

Pulak, Qasim, Ritesh, and Suresh participated in a tournament comprising of eight rounds. In each round, they formed two pairs, with each of them being in exactly one pair. The only restriction in the pairing was that the pairs would change in successive rounds. For example, if Pulak formed a pair with Qasim in the first round, then he would have to form a pair with Ritesh or Suresh in the second round. He would be free to pair with Qasim again in the third round. In each round, each pair decided whether to play the game in that round or not. If they decided not to play, then no money was exchanged between them. If they decided to play, they had to bet either â‚¹1 or â‚¹2 in that round. For example, if they chose to bet â‚¹2, then the player winning the game got â‚¹2 from the one losing the game. At the beginning of the tournament, the players had â‚¹10 each. The following table shows partial information about the amounts that the players had at the end of each of the eight rounds. It shows every time a player had â‚¹10 at the end of a round, as well as every time, at the end of a round, a player had either the minimum or the maximum amount that he would have had across the eight rounds. For example, Suresh had â‚¹10 at the end of Rounds 1, 3, and 8 and not after any of the other rounds. The maximum amount that he had at the end of any round was â‚¹13 (at the end of Round 5), and the minimum amount he had at the end of any round was â‚¹8 (at the end of Round 2). At the end of all other rounds, he must have had either â‚¹9, â‚¹11, or â‚¹12. It was also known that Pulak and Qasim had the same amount of money with them at the end of Round 4.
Pulak Qasim Ritesh Suresh Round 1 Rs.8 Rs.10 Rs.10 Round 2 Rs.13 Rs.10 Rs.8 Round 3 Rs.10 Round 4 Round 5 Rs.10 Rs.10 Rs.13 Round 6 Round 7 Rs.12 Rs.4 Round 8 Rs.13 Rs.10

Question 42 :

How much money (in â‚¹) did Ritesh have at the end of Round 4?

Difficulty : Moderate **Average Time : 269 Seconds**

Solution :

The correct answer is **6**

- In this game, only exchanges of Rs 2, Rs 1, or Rs 0 can occur.
- Consecutive exchanges between the same two persons are not allowed.
- The total amount after each exchange always remains at Rs 40.
- For rounds 1, 2, and 5, vacant places can be filled using this information.
- Maximum and minimum amounts are specified in the table.
- Conclusions for all remaining exchanges: Pulak can have Rs 12 or Rs 11. Qasim can have Rs 9 or Rs 11. Ritesh can have Rs 5, Rs 6, Rs 7, Rs 8, or Rs 9. Suresh can have Rs 9, Rs 11, or Rs 12.
- In round 8, Qasim and Ritesh together have Rs 17.

Qasim can only have Rs 11 or Rs 9. If he has Rs 9, then Ritesh will have Rs 8, which is not possible.

- After round 8, Qasim and Ritesh have Rs 11 and Rs 6, respectively.
- In round 8, Ritesh witnessed an increase of 2 and Qasim a decrease of 1.
- Consequently, Pulak must have had an increase of 1 (otherwise, for a decrease of 3, he should have had Rs 15 after round 7, which is not possible).
- Suresh must have had a decrease of 2.
- After round 7, the respective amounts with Pulak, Qasim, Ritesh, and Suresh will be Rs 12, Rs 12, Rs 4, and Rs 12.
- In round 5 Pulak and Qasim have increased by 1 so obviously Ritesh and Suresh's amounts will be decreased by 1. Hence, their respective amounts are Rs 6 and Rs 12.
- After round 6 Qasim's amount has to be Rs 11(it cannot be 9 as in round 7 Qasim's amount is Rs 12, an increase of 3 from Rs 9 will be a contradiction).
- Now Ritesh's Rs 5 is a decrease of 2, so an increase of Rs 2 can happen only with Pulak making his amount equal to Rs 12. Hence, Suresh will have Rs 12 at the end of Round 6.

Based on the given information we can complete the table as follows:

Round	Pulak (Rs 10)	Qasim (Rs 10)	Ritesh (Rs 10)	Suresh (Rs 10)	Cash exchange between
Round 1	Rs 12	Rs 8	Rs 10	Rs 10	P-Q, R-S
Round 2	Rs 13	Rs 10	Rs 9	Rs 8	P-R, Q-S
Round 3	Rs 11	Rs 11	Rs 8	Rs 10	P-S, Q-R
Round 4	Rs 11	Rs 11	Rs 6	Rs 12	P-Q, R-S
Round 5	Rs 10	Rs 10	Rs 7	Rs 13	P-S, Q-R
Round 6	Rs 12	Rs 11	Rs 5	Rs 12	P-R, Q-S
Round 7	Rs 12	Rs 12	Rs 4	Rs 12	P-S, Q-R

Round 8	Rs 13	Rs 11	Rs 6	Rs 10	P-Q, R-S

Ritesh had exactly Rs.6 at the end of Round 4.

Hence, **6** is the correct answer.

Comprehension :

Pulak, Qasim, Ritesh, and Suresh participated in a tournament comprising of eight rounds. In each round, they formed two pairs, with each of them being in exactly one pair. The only restriction in the pairing was that the pairs would change in successive rounds. For example, if Pulak formed a pair with Qasim in the first round, then he would have to form a pair with Ritesh or Suresh in the second round. He would be free to pair with Qasim again in the third round. In each round, each pair decided whether to play the game in that round or not. If they decided not to play, then no money was exchanged between them. If they decided to play, they had to bet either â‚¹1 or â‚¹2 in that round. For example, if they chose to bet â‚¹2, then the player winning the game got â‚¹2 from the one losing the game. At the beginning of the tournament, the players had â‚¹10 each. The following table shows partial information about the amounts that the players had at the end of each of the eight rounds. It shows every time a player had â‚¹10 at the end of a round, as well as every time, at the end of a round, a player had either the minimum or the maximum amount that he would have had across the eight rounds. For example, Suresh had â‚¹10 at the end of Rounds 1, 3, and 8 and not after any of the other rounds. The maximum amount that he had at the end of any round was â‚¹13 (at the end of Round 5), and the minimum amount he had at the end of any round was â‚¹8 (at the end of Round 2). At the end of all other rounds, he must have had either â‚¹9, â‚¹11, or â‚¹12. It was also known that Pulak and Qasim had the same amount of money with them at the end of Round 4.
Pulak Qasim Ritesh Suresh Round 1 Rs.8 Rs.10 Rs.10 Round 2 Rs.13 Rs.10 Rs.8 Round 3 Rs.10 Round 4 Round 5 Rs.10 Rs.10 Rs.13 Round 6 Round 7 Rs.12 Rs.4 Round 8 Rs.13 Rs.10

Question 43 :

How many games were played with a bet of â‚¹2?

Difficulty : Moderate **Average Time : 256 Seconds**

Solution :

The correct answer is **6**

- In this game, only exchanges of Rs 2, Rs 1, or Rs 0 can occur.
- Consecutive exchanges between the same two persons are not allowed.
- The total amount after each exchange always remains at Rs 40.
- For rounds 1, 2, and 5, vacant places can be filled using this information.
- Maximum and minimum amounts are specified in the table.
- Conclusions for all remaining exchanges: Pulak can have Rs 12 or Rs 11. Qasim can have Rs 9 or Rs 11. Ritesh can have Rs 5, Rs 6, Rs 7, Rs 8, or Rs 9. Suresh can have Rs 9, Rs 11, or Rs 12.
- In round 8, Qasim and Ritesh together have Rs 17.

Qasim can only have Rs 11 or Rs 9. If he has Rs 9, then Ritesh will have Rs 8, which is not possible.

- After round 8, Qasim and Ritesh have Rs 11 and Rs 6, respectively.
- In round 8, Ritesh witnessed an increase of 2 and Qasim a decrease of 1.
- Consequently, Pulak must have had an increase of 1 (otherwise, for a decrease of 3, he should have had Rs 15 after round 7, which is not possible).
- Suresh must have had a decrease of 2.
- After round 7, the respective amounts with Pulak, Qasim, Ritesh, and Suresh will be Rs 12, Rs 12, Rs 4, and Rs 12.
- In round 5 Pulak and Qasim have increased by 1 so obviously Ritesh and Suresh's amounts will be decreased by 1. Hence, their respective amounts are Rs 6 and Rs 12.
- After round 6 Qasim's amount has to be Rs 11(it cannot be 9 as in round 7 Qasim's amount is Rs 12, an increase of 3 from Rs 9 will be a contradiction).
- Now Ritesh's Rs 5 is a decrease of 2, so an increase of Rs 2 can happen only with Pulak making his amount equal to Rs 12. Hence, Suresh will have Rs 12 at the end of Round 6.

Based on the given information we can complete the table as follows:

Round	Pulak (Rs 10)	Qasim (Rs 10)	Ritesh (Rs 10)	Suresh (Rs 10)	Cash exchange between
Round 1	Rs 12	Rs 8	Rs 10	Rs 10	P-Q, R-S
Round 2	Rs 13	Rs 10	Rs 9	Rs 8	P-R, Q-S
Round 3	Rs 11	Rs 11	Rs 8	Rs 10	P-S, Q-R
Round 4	Rs 11	Rs 11	Rs 6	Rs 12	P-Q, R-S
Round 5	Rs 10	Rs 10	Rs 7	Rs 13	P-S, Q-R
Round 6	Rs 12	Rs 11	Rs 5	Rs 12	P-R, Q-S
Round 7	Rs 12	Rs 12	Rs 4	Rs 12	P-S, Q-R

Round 8	Rs 13	Rs 11	Rs 6	Rs 10	P-Q, R-S

From the table we can see that the amounts increased or decreased by 2 at 12 instances, so there are exactly 6 matches that were paid with a bet of Rs.2.

Hence, **6** is the correct answer.

Comprehension :

Pulak, Qasim, Ritesh, and Suresh participated in a tournament comprising of eight rounds. In each round, they formed two pairs, with each of them being in exactly one pair. The only restriction in the pairing was that the pairs would change in successive rounds. For example, if Pulak formed a pair with Qasim in the first round, then he would have to form a pair with Ritesh or Suresh in the second round. He would be free to pair with Qasim again in the third round. In each round, each pair decided whether to play the game in that round or not. If they decided not to play, then no money was exchanged between them. If they decided to play, they had to bet either â‚¹1 or â‚¹2 in that round. For example, if they chose to bet â‚¹2, then the player winning the game got â‚¹2 from the one losing the game. At the beginning of the tournament, the players had â‚¹10 each. The following table shows partial information about the amounts that the players had at the end of each of the eight rounds. It shows every time a player had â‚¹10 at the end of a round, as well as every time, at the end of a round, a player had either the minimum or the maximum amount that he would have had across the eight rounds. For example, Suresh had â‚¹10 at the end of Rounds 1, 3, and 8 and not after any of the other rounds. The maximum amount that he had at the end of any round was â‚¹13 (at the end of Round 5), and the minimum amount he had at the end of any round was â‚¹8 (at the end of Round 2). At the end of all other rounds, he must have had either â‚¹9, â‚¹11, or â‚¹12. It was also known that Pulak and Qasim had the same amount of money with them at the end of Round 4 Pulak Qasim Ritesh Suresh Round 1 Rs.8 Rs.10 Rs.10 Round 2 Rs.13 Rs.10 Rs.8 Round 3 Rs.10 Round 4 Round 5 Rs.10 Rs.10 Rs.13 Round 6 Round 7 Rs.12 Rs.4 Round 8 Rs.13 Rs.10

Question 44 :

Which of the following pairings was made in Round 5?

Difficulty : Moderate **Average Time : 261 Seconds**

Options :

1. Pulak and Ritesh
2. Pulak and Qasim
3. Pulak and Suresh
4. Qasim and Suresh

Solution :

The correct answer is **Option 3** i.e. **Pulak and Suresh**

In this game, only exchanges of Rs 2, Rs 1, or Rs 0 can occur.

- Consecutive exchanges between the same two persons are not allowed.
- The total amount after each exchange always remains at Rs 40.
- For rounds 1, 2, and 5, vacant places can be filled using this information.
- Maximum and minimum amounts are specified in the table.
- Conclusions for all remaining exchanges: Pulak can have Rs 12 or Rs 11. Qasim can have Rs 9 or Rs 11. Ritesh can have Rs 5, Rs 6, Rs 7, Rs 8, or Rs 9. Suresh can have Rs 9, Rs 11, or Rs 12.
- In round 8, Qasim and Ritesh together have Rs 17.
- Qasim can only have Rs 11 or Rs 9. If he has Rs 9, then Ritesh will have Rs 8, which is not possible.
- After round 8, Qasim and Ritesh have Rs 11 and Rs 6, respectively.
- In round 8, Ritesh witnessed an increase of 2 and Qasim a decrease of 1.
- Consequently, Pulak must have had an increase of 1 (otherwise, for a decrease of 3, he should have had Rs 15 after round 7, which is not possible).
- Suresh must have had a decrease of 2.
- After round 7, the respective amounts with Pulak, Qasim, Ritesh, and Suresh will be Rs 12, Rs 12, Rs 4, and Rs 12.
- In round 5 Pulak and Qasim have increased by 1 so obviously Ritesh and Suresh's amounts will be decreased by 1. Hence, their respective amounts are Rs 6 and Rs 12.
- After round 6 Qasim's amount has to be Rs 11(it cannot be 9 as in round 7 Qasim's amount is Rs 12, an increase of 3 from Rs 9 will be a contradiction).
- Now Ritesh's Rs 5 is a decrease of 2, so an increase of Rs 2 can happen only with Pulak making his amount equal to Rs 12. Hence, Suresh will have Rs 12 at the end of Round 6.

Based on the given information we can complete the table as follows:

Round	Pulak (Rs 10)	Qasim (Rs 10)	Ritesh (Rs 10)	Suresh (Rs 10)	Cash exchange between
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Round 3	Rs 11	Rs 11	Rs 8	Rs 10	P-S, Q-R
Round 4	Rs 11	Rs 11	Rs 6	Rs 12	P-Q, R-S

Round 5	Rs 10	Rs 10	Rs 7	Rs 13	P-S, Q-R
Round 6	Rs 12	Rs 11	Rs 5	Rs 12	P-R, Q-S
Round 7	Rs 12	Rs 12	Rs 4	Rs 12	P-S, Q-R
Round 8	Rs 13	Rs 11	Rs 6	Rs 10	P-Q, R-S

In Round 5 Pulak and Suresh played against each other.

Hence, **Pulak and Suresh** is the correct answer.

Question 45 :

The arithmetic mean of all the distinct numbers that can be obtained by rearranging the digits in 1421, including itself, is

Difficulty : Moderate **Average Time : 179 Seconds**

Options :

1. 3333
2. 2442
3. 2222
4. 2592

Solution :

The correct answer is **Option 3** i.e. **2222**.

Total number of 4 digit numbers possible = \({4!\over 2!} = 12\)

Number of 1, 2 and 4 in unit, tens, hundreds and thousands place will be in ratio = 2:1:1

Sum = 6(1) + 3(2) + 3(4) = 24

Sum = 24(1) + 24(10) + 24(100) + 24(1000) = 24(1111)

Mean = \(24(1111)\over 12\) = 2222.

Question 46 :

Two ships are approaching a port along straight routes at constant speeds. Initially, the two ships and the port formed an equilateral triangle with sides of length 24 km. When the slower ship travelled 8 km, the triangle formed by the new

positions of the two ships and the port became right-angled. When the faster ship reaches the port, the distance, in km, between the other ship and the port will be

Difficulty : Moderate **Average Time : 57 Seconds**

Options :

1. 6
2. 4
3. 8
4. 12

Solution :

The correct answer is **Option 4** i.e. **12**.

Let the slower ship be X and Faster ship be Y.

O is the vertex of equilateral triangle. Then, port (O) makes an angle of 60°.

When X travels 8 km the new triangle formed is right angled i.e. other two angles are 30° and 90°.

Distance between O and S = 24 - 8 = 16 km.

cos 60° = \(OY\over OX\)

\({1\over 2}={OY\over 16}\)

OY = 8 km

It means distance travelled by Y when X travelled 8 km = 24 - 8 = 16 km.

Ratio of their speed = 2 : 1

Distance between X and port when Y reaches port will be 12 km. (using ratio of their speeds)

Question 47 :

Suppose k it is any integer such that the equation 2x2 + kx + 5 = 0 has no real roots and the equation x2 + (k 5)x + 1 = 0 has two distinct real roots for x. Then, the number of possible values of k is

Difficulty : Moderate **Average Time : 70 Seconds**

Options :

1. 9

13

3. 8

4. 7

Solution :

The correct answer is **Option 1** i.e. **9**.

$2x^2 + kx + 5 = 0$ has no real roots i.e. D 0

$k^2 - 4 \times 2 \times 5$ 0

$k^2 - 40$ 0

(k - \(\sqrt40\))(k + \(\sqrt40\)) 0

k \(\in \) (-\(\sqrt40\),\(\sqrt40\))

$x^2 + (k\ 5)x + 1 = 0$ has two distinct real roots i.e. D > 0.

$(k\ 5)^2 - 4 \times 1 \times 1 > 0$

$k^2 - 10k + 21 > 0$

(k - 7)(k - 3) > 0

k \(\in \) (3, 7)

In total 9 interger values of k are possible.

Question 48 :

A glass contains 500 cc of milk and a cup contains 500 cc of water. From the glass, 150 cc of milk is transferred to the cup and mixed thoroughly. Next, 150 cc of this mixture is transferred from the cup to the glass. Now, the amount of water in the glass and the amount of milk in the cup are in the ratio

Difficulty : Moderate | **Average Time : 76 Seconds**

Options :

1. 3 : 10

2. 10 : 3

3. 1 : 1

4. 10 : 13

Solution :

The correct answer is**Option 3** i.e. **1 : 1**.

milk in glass = 500 cc

water in cup = 500 cc

When, 150 cc of milk is transfered to cup from glass.

Now, milk in glass = 350 cc

Total mixture in cup = 650 cc

Ratio of milk and water in cup = 3 : 10

Now, 150 cc of this mixture is transfered to glass.

Ratio of water in glass to milk in cup = \({10\over 13}\times150:{3\over 13}\times500\) = 1 : 1.

Question 49 :

If (c = {16xover y} + {49yover x}) for some non-zero real numbers x and y, then c cannot take the value

Difficulty : Moderate **Average Time : 52 Seconds**

Options :

1. 60
2. -50
3. -70
4. -60

Solution :

The correct answer is **Option 2** i.e. **-50**.

Given, \(c = {16x\over y} + {49y\over x}\)

AM \(\ge\) GM

\({16x\over y} + {49y\over x}\over 2\) \(\ge\) \(({16x\over y}\times {49y\over x})^{1\over2}\)

\({16x\over y} + {49y\over x}\) \(\ge\) 56

\(x\over y\) is positive, c is greater tha equal to 56.

\(x\over y\) is negative, c is less than equal to -56.

c \(\in\) (-\(\infty\), -56] U [56, \(\infty\)].

-50 is not in the range of c.

Question 50 :

The minimum possible value of ({x^2 - 6x + 10} over (3 - x)), for x 3, is

Difficulty : Moderate **Average Time : 71 Seconds**

Options :

1. -2
2. \(-{1 \over 2}\)
3. \({1 \over 2}\)
4. 2

Solution :

The correct answer is **Option 4** i.e. **2**.

Given, \({x^2 - 6x + 10} \over (3 - x)\)

Let, \({x^2 - 6x + 10} \over (3 - x)\) = A

$x^2 - 6x + 10 = 3A - xA$

$x^2 - (6 - A)x + (10 - 3A) = 0$

This has real roots,

$(6 - A)^2 - 4 \times (10 - 3A) \ge 0$

p \(\ge\) 2, p \(\le\) -2

For p = -2, x = 4 which is not possible. since, x 3.

For p = 2, x = 2 which is possible.

Question 51 :

Bob can finish a job in 40 days, if he works alone. Alex is twice as fast as Bob and thrice as fast as Cole in the same job. Suppose Alex and Bob work together on the first day, Bob and Cole work together on the second day, Cole and Alex work together on the third day, and then, they continue the work by repeating this three-day roster, with Alex and Bob working together on the fourth day, and so on. Then, the total number of days Alex would have worked when the job gets finished, is

Difficulty : Moderate **Average Time : 83 Seconds**

Solution :

The correct answer is **11**.

Let the efficiency of Bob be 3. Then, efficiency of Alex and Cole is 6 and 2.

Total work = 40 × 3 = 120.

Amount of work done by Alex and Bob on first day = 6 + 3 = 9.

Amount of work done by Bob and cole on second day = 3 + 2 = 5

Amount of work done by Alex and Cole on third day = 6 + 2 = 8

Total work done on these 3 days = 9 + 5 + 8 = 22

Continuing this process of 3 days we get = 22 × 5 = 110.

And last work will be finished on 17th day

Alex worked on 1st, 3rd, 4th, 6th, 7th, 9th, 10th, 12th, 13th, 15th, 17th day

Total = 11 days.

Question 52 :

Moody takes 30 seconds to finish riding an escalator if he walks on it at his normal speed in the same direction. He takes 20 seconds to finish riding the escalator if he walks at twice his normal speed in the same direction. If Moody decides to stand still on the escalator, then the time, in seconds, needed to finish riding the escalator is

Difficulty : Moderate **Average Time : 61 Seconds**

Solution :

The correct answer is **60**.

Let the speed of moody be x and speed of escalator be y

If moody walks at his normal speed then,

Total distance = 30(x + y)

If moody walks at twice his speed then,

Total distance = 20(2x + y)

Since, distance is same in both case then,

30(x + y) = 20(2x + y)

30x + 30y = 40x + 20y

x = y

Total distance = 60y

Total time if moody dont walk = $\frac{60y}{y}$ = 60s.

Question 53 :

Consider six distinct natural numbers such that the average of the two smallest numbers is 14, and the average of the two largest numbers is 28. Then, the maximum possible value of the average of these six numbers is

Difficulty : Moderate **Average Time : 52 Seconds**

Options :

1. 23
2. 24
3. 23.5
4. 22.5

Solution :

The correct answer is **Option 4** i.e. **22.5**.

Let the six distinct number be a, b, c, d,e and f.

Average of a and b = 14

Average of e and f = 28

To maximise the value of $\frac{a + b + c + d + e + f}{6}$ we need to maximise value of c and d.

Possible value of e and f to maximise average of six numbers are 27 and 29.

Then, possibel value of c and d are 25 and 26

$\frac{28 + 25 + 26 + 56}{6}$

$\frac{135}{6}$ = 22.5.

Question 54 :

The lengths of all four sides of a quadrilateral are integer valued. If three of its sides are of length 1 cm, 2 cm and 4 cm, then the total number of possible lengths of the fourth side is

Difficulty : Moderate **Average Time : 63 Seconds**

Options :

1. 5

4

3. 3

4. 6

Solution :
The correct answer is **Option 1** i.e. **5**.

Let the fourth side be x.

Since, sum of 3 sides of quadrilateral is greater than 4th side.

1 + 2 + 4 > x x 7

1 + 2 + x > 4 x > 1

possible values of x are 2, 3, 4, 5, 6

Total values = 5.

Question 55 :
The average of all 3-digit terms in the arithmetic progression 38, 55, 72, ..., is

Difficulty : Moderate **Average Time : 43 Seconds**

Solution :
The correct answer is **548**.

Given A.P. = 38, 55, 72, ...,

General term = 38 + (n - 1)17 = 17(n + 1) + 4 = 17k + 4

Every term of this progression is in form 17K + 4.

Least 3 digit number in progression =106

Greatest 3 digit number in progression = 990

990 = 106 + (n - 1)17

n = 53

Sum = \(53\over 2 \)[2 × 106 + (53 - 1)17] = 29044

Average = \(29044\over 53\) = 548.

Question 56 :

If ((sqrt{7over 5})^{3x-y} = {875over 2401}) and (({4aover b})^{6x-y}=({2aover b})^{y-6x}) for all non-zero real values of a and b, then the value of x + y is

Difficulty : Moderate **Average Time : 43 Seconds**

Solution :

The correct answer is **14**.

\((\sqrt{7\over 5})^{3x-y} = {875\over 2401}\)

\(({7\over 5})^{3x-y\over2}={125\over 343}\)

\(({7\over 5})^{3x-y\over2}=({7\over 5})^{-3}\)

\(\) 3x - y = -6

\(({4a\over b})^{6x-y}=({2a\over b})^{y-6x}\)

Since the bases are different then, power must be 0 to make this possible. so, y = 6x

3x - 6x = -6

x = 2

y = 12

x + y = 14.

Question 57 :

Suppose the medians BD and CE of a triangle ABC intersect at a point O. If area of triangle ABC is 108 sq. cm., then, the area of the triangle EOD, in sq. cm., is

Difficulty : Moderate **Average Time : 51 Seconds**

Solution :

The correct answer is **9.**

Ar of ABD : Ar of BDC = 1:1

Ar of ABD = Ar of BDC = 54 sq. cm

Ar of ADE : Ar of EDB = 1 : 1

Ar of ADB = Ar of EDB = 27 sq. cm

Since, O is the centroid then it divides medians in 2 : 1.

Ar of BEO : Ar of EOD = 2 : 1

Ar of EOD = \({1\over 3}\times27\) = 9 sq. cm.

Question 58 :

A donation box can receive only cheques of â‚¹100, â‚¹250, and â‚¹500. On one good day, the donation box was found to contain exactly 100 cheques amounting to a total sum of â‚¹15250. Then, the maximum possible number of cheques of â‚¹500 that the donation box may have contained, is

Difficulty : Moderate **Average Time : 47 Seconds**

Solution :

The correct answer is **12**.

Let the number of cheques of â‚¹100, â‚¹250 and â‚¹500 be x, y and z.

x + y + z = 100....(i)

And, 100x + 250y + 500z = â‚¹15250

2x + 5y + 10z = 305....(ii)

Solving (i) and (ii)

We get , 3x + 8z = 105

Maximum possible number of z is 12.

Question 59 :

Two cars travel from different locations at constant speeds. To meet each other after starting at the same time, they take 1.5 hours if they travel towards each other, but 10.5 hours if they travel in the same direction. If the speed of the slower car is 60 km/hr, then the distance traveled, in km, by the slower car when it meets the other car while traveling towards each other, is

Difficulty : Moderate **Average Time : 49 Seconds**

Options :

1. 100
2. 90
3. 120
4. 150

Solution :

The correct answer is **Option 2** i.e. **90**.

Both cars 1.5 hr to meet each other when travel towards each other.

Speed of slower car = 60 km/h

Distance covered by slower car when they meet = 60 × 1.5 = 90 km.

Question 60 :

A school has less than 5000 students and if the students are divided equally into teams of either 9 or 10 or 12 or 25 each, exactly 4 are always left out. However, if they are divided into teams of 11 each, no one is left out. The maximum number of teams of 12 each that can be formed out of the students in the school is

Difficulty : Moderate **Average Time : 51 Seconds**

Solution :

The correct answer is **150.**

When students divided in groups of 9, 10, 12 or 25 leaves exactly 4 students.

LCM(9, 10, 12, 25) = 900

General form of total students = 900k + 4

900k + 4 is divisible by 11 which is possible when k is 2.

Maximum number of 12 student group possible = \(1800\over 12\) = 150.

Question 61 :

Nitu has an initial capital of â‚¹20,000. Out of this, she invests â‚¹8.000 at 5.5% in bank A, â‚¹5,000 at 5.6% in bank B and the remaining amount at x% in bank C, each rate being simple interest per annum. Her combined annual interest income from these investments is equal to 5% of the initial capital. If she had invested her entire initial capital in bank C alone, then her annual interest income, in rupees, would have been

Difficulty : Moderate **Average Time : 49 Seconds**

Options :

1. 800
2. 700
3. 900
4. 1000

Solution :

The correct answer is **Option 1** i.e. **800**.

Interest from Bank A = \(8000\times5.5\times1\over100\)

Interest from Bank B = \(5000\times5.6\times1\over100\)

Interest from Bank C = \(7000\times x\times1\over100\)

sum of interests from Bank A, B and C = 5 % of â‚¹20000

\(8000\times5.5\times1\over100\) + \(5000\times5.6\times1\over100\) + \(7000\times x\times1\over100\) = \({5\over100}\times20000\)

x = 4 %

Interest if all money is invested in Bank C = \(20000\times 4\times1\over100\) = â‚¹800.

Question 62 :

In a triangle ABC, AB = AC = 8 cm. A circle drawn with BC as diameter passes through A. Another circle drawn with center at A passes through B and C. Then the area, in sq. cm, of the overlapping region between the two circles is

Difficulty : Moderate

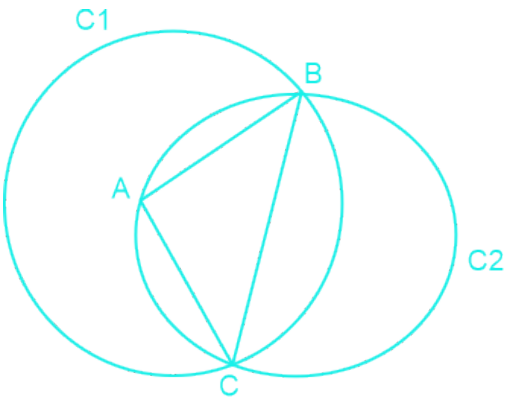
Average Time : 69 Seconds

Options :

1. 16(– 1)
2. 32
3. 16
4. 32(– 1)

Solution :

The correct answer is **Optiob 4** i.e. **32(– 1)**



As given in the figure, BC is the diameter of circle C2.

So,

BAC = 90° [angle in the semi circle is 90°]

Therefore, overlapping area = (1/2)(Area of circle C2) + (Area of the minor sector made be BC in C1)

Also,

$AB^2 + AC^2 = BC^2$

$BC^2 = 8^2 + 8^2 = 128$

BC = 82

Radius of C2 = Half of length of BC = 42 cm

Area of C2 = $(42)^2 = 32\ cm^2$

A is the centre of C1 and C1 passes through B, so AB is the radius of C1 and is equal to 8 cm

Area of the minor sector made be BC in C1 = (1/4)(Area of circle C1) - (Area of triangle ABC) = $(1/4)(8)^2$ (1/2 × 8 × 8) = 16 – 32 cm^2

Therefore,

Overlapping area between the two circles = (1/2)(Area of circle C2) + (Area of the minor sector made be BC in C1)

= (1/2)(32) + (16 - 32) = 32 (- 1) cm^2

Question 63 :

Let r be a real number and Then, the equation f(x) = f(f(x)) holds for all real values of x where

Difficulty : Moderate **Average Time : 93 Seconds**

Options :

1. x r
2. x > r
3. x r
4. x r

Solution :

The correct answer is **Option 4** i.e. **x r**.

If x r

f(x) = r

f(x) = f(f(x))

r = f(r)

r = r

If x \(\ge\) r

f(x) = 2x - r

f(x) = f(f(x))

2x - r = f(r)

2x - r = 2(2x - r) - r

x = r

Then, x \(\le\) r.

Question 64 :

A group of N people worked on a project. They finished 35% of the project by working 7 hours a day for 10 days. Thereafter, 10 people left the group and the remaining people finished the rest of the project in 14 days by working 10 hours a day. Then the value of N is

Difficulty : Moderate

Average Time : 69 Seconds

Options :

1. 150
2. 36
3. 23
4. 140

Solution :

The correct answer is **Option 4** i.e. **140**.

Work completed by N people working for 7 hrs perday for 10 days = N × 10 × 7 = 70N

35 % of total work = 70N

Total work = \({70N \times 100}\over 35\) = 200N

Remaining work = 200N - 70N = 130N

After 10 men left remaining work was done by them in 14 days working for 10hrs per day,

(N - 10) × 14 × 10 = 130N

N = 140.

Question 65 :

If ((3 + 2sqrt2)) is a root of the equation ax2 + bx + c = 0, and ((4 + 2sqrt3)) is a root of the equation ay2 +my + n = 0, where a, b, c, m and n are integers, then the value of ((bover m) + ((c - 2b)over n)) is

Difficulty : Moderate **Average Time : 63 Seconds**

Options :

1. 4
2. 0
3. 1
4. 3

Solution :

The correct answer is **Option 1** i.e. **4**.

a, b, c, m and n are interges so, if \((3 + 2\sqrt2)\) is one root then \((3 - 2\sqrt2)\) is another root.

If \((4 + 2\sqrt3)\) is one root then \((4 - 2\sqrt3)\) is another root.

For equation $ax^2 + bx + c = 0$,

sum of roots = \(-b\over a\)

6 = \(-b\over a \)

b = -6a

Product of root = \(c\over a\)

1 = \(c\over a\)

c = a

For equation ay^2 +my + n = 0,

Sum of roots = \(-m\over a\)

8 = \(-m\over a\)

m = -8a

Product of roots = \(n\over a\)

4 = \(n\over a\)

n = 4a

(\(b\over m \) + \((c - 2b)\over n\)) (\(-6a\over -8a \) + \((a + 12a)\over 4a\)) 4.

Question 66 :

In an examination, the average marks of students in sections A and B are 32 and 60, respectively. The number of students in section A is 10 less than that in section B. If the average marks of all the students across both the sections combined is an integer, then the difference between the maximum and minimum possible number of students in section A is

Difficulty : Moderate

Average Time : 107 Seconds

Solution :

The correct answer is **63**.

Let the number of students in section A and B be x and y.

given, y = x + 10

\(32x + 60y\over x + y\) = k

\(32x + 60(x + 10)\over x + x + 10\) = k

\(46x + 300\over x + 5\) = k

x can take values = 2, 5, 9, 30, 65.

Difference = 65 - 2 = 63.

Cat 2023 previous-year-papers Previous Year Question Paper Analysis

The analysis of Cat 2023 previous-year-papers Previous Year Question Paper held on 2022-11-22 in the Evening exam is as follows:

1. 66 questions were moderate.
2. The safe score is 100 marks.
3. 24 questions were asked from Verbal Aptitude and Reading Comprehension, 20 questions were asked from Logical Reasoning and Data Interpretation and 22 questions were asked from Quantitative Aptitude
4. 21 questions should have been skipped if you were short of time.