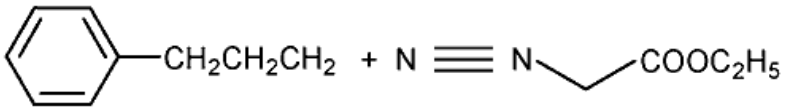
GPAT QUESTION PAPER 2007 WITH ANSWER KEY

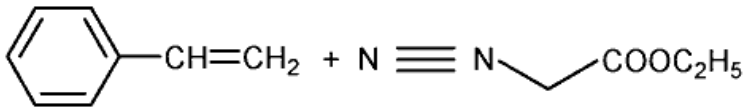
PHARMACEUTICAL SCIENCE

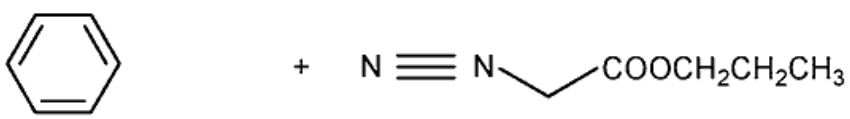
Time : 3 hours **Maximum Marks : 150**

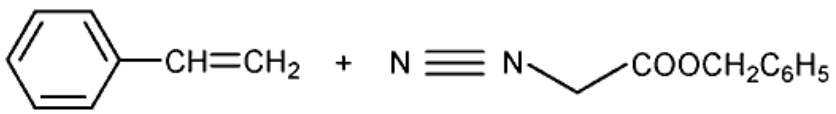
(Q. 1 - 20) CARRY ONE MARK EACH

1. The characteristic odour of onion bulbs is attributed to
   (a) Quercetin glycosides
   (b) Furostanol glycosides
   (c) Heterogeneous sulpahted polysaccharides
   (d) Alkyl or alkenyl disulphides
2. The chief constituent of the seeds *strophanthus gratus* or woods of *Acokantheraschimiperi* belonging to the family Apocynaceae is G-stropanthin. On hydrolysis, it gives
   (a) Scallarenin (b) Ouabagenin (c) Cannogenin (d) Diosgenin
3. The duration of action of sublingual nitroglycerin tablet is
   (a) 8-10 hours (b) 4-8 hours (c) 10-30 minutes (d) 3-5 minutes
4. Identify the adrenergic receptor, whose agonists can be missed used by sportsmen forAnabolic effects.
   (a) α_1 (b) α_2 (c) β_1 (d) β_2
5. When the urinary pH becomes 8.0, significant increase in the excretion of the drugs takes place
   (a) Mepyramine (b) Aspirin (c) Morphine (d) Mecamylamine
6. Condensation of 6-hydroxy-2,4,5-triaminopyridine with 1,1,3-trichloro acetone and N-(4-aminobenzoyl) glutamic acid at pH 4 to5, in the presence of sodium bisulphate gives
   (a) Pteroyl glutamic acid (b) Amethoterin
   (c) Triamtererne (d) Aciclovir
7. The common structural feature of iodoxamic acid, iotalamic acid, diatrizoic acid and Iocarmic acid is
   (a) Sulphonaphthalein (b) 2,4,6-tri-iodo benzoic acid
   (c) Tri-iodo triphenyl methanoic acid (d) Tri-iodo diphenyl methanoic acid
8. Tranylcypromine, a psychonanaleptic and antidepressant drug is synthesized from

(a) 

(b) 

(c) 

(d) 

9. List of diseases and ailments which a drug may not purport to prevent or cure ormake claims to prevent or Cure under the Drugs and Cosmetics Rule 1945 is given under

(a) Schedule J (b) Schedule K (c) Schedule M (d) Schedule P

10. Annatto consists of the dried seeds of *Bixa orellana* .L. Family Bixaceae. The chief constituent is

(a) Triterpene alcohol (b) Crocin and crocetin

(c) Capsanthin (d) Carotenoids

11. 'Cresol with soap solution' is a preparation, in which soap is incorporated to

(a) Impart detergent property

(b) Improve mutual miscibility of cresol and water by reducing critical solution temperature of Cresol water system

(c) Sustain the germicidal action of cresol

(d) Improve the stability of cresol

12. When stoichiometric amount of $CaCl_2$ is added to an emulsion stabilized with sodium alginate, it will

(a) Crack immediately (b) Change the nature from w/o to o/w

(c) Change the nature from o/w to w/o (d) Accelerate the phenomenon of Ostwald ripening

13. Chlorine and bromine substitution in aromatic compounds

(a) Enhances fluorescence (b) Does not change the fluorescence

(c) Quenches the fluorescence (d) Removes the fluorescenc

14. Solvent programming, also called gradient elution, involves

(a) Changing the column length (b) Changing the mobile phase composition

(c) Using themobile phase is unchanged (d) Successive injection of sample

15. Calibration of the cell constant of conductance cell is carried out by using a solution

(a) 0.1 M NaCl (b) 0.1 M $CaCl_2$

(c) 0.1 M KCl (d) 0.1 M $AlCl_3$

16. Hybridoma technology is widely used for producing

(a) Callus culture (b) Organ culture

(c) Monoclonal antibodies (d) Attenuated microorganism

17. 'Gene therapy' refers to the process of

(a) Identifying disease causing genes and activating them for therapeutic benefits

(b) Increasing the expression levels of the set of genes involved in a given disease in affected cells through selective modulating agents

(c) Transfer of new genetic material to the cells of an individual for therapeutic benefit

(d) Removal of the protein corresponding to the disease causing genes from the cells of the affected individual

18. A technician is attempting to sterilize a plug of cotton in hermetically sealed condition in a glass bottle by autoclaving. Which of the following statement is correct

(a) It should be sterilized at 115-118° C for 30 minutes

(b) It should be sterilizedat121 to 124° C for 15 minutes at 15 lbs/sq. inch pressure

(c) Sterilization cannot beachieved

(d) It should be autoclaved at 126-129° C with saturated steam for 10 minutes

19. Hyperuricaemia is associated with the abnormal metabolism of

(a) Pyrimidine (b) Purine (c) Riboflavin (d) Thiamine

20. What is the concentration of NaCl required making 1% solution of cocaine HCl Isotonic with blood plasma? Freezing point of 1% w/v solution of NaCl is -0.576°C and freezing point of 1% w/v cocaine HCl is - 0.09°C

(a) 0.746 % w/v (b) 0.9 % w/v (c) 0 0.5% w/v (d) 0.373% w/v

Q.21 TO 75 CARRY TWO MARKS EACH

21. Arillode is

(a) Warty out-growth from microphyl, eg., castor

(b) Succulent growth from hilum covering the entire seed, eg., nutmeg

(c) Outgrowth originating from micropyle and covering the seeds, eg., cardamom

(d) Enlarged funicle, eg., colchicum seed

22. Cinnamon consists of the dried inner bark of the shoots of coppiced tree of *Cinnamomum zeylanicum* Nees. The typical microscopic charaters of the bark are

(a) Biseriate medullary rays, secretory cavities containing volatile oil and mucilage and few starch grains in cortical parenchyma and calcium oxalate in parenchymatous cells.

(b) 2-5 layers of cork cells containing oil globules. Presence of schizogenous canal

(c) Medullary rays multiseriate, the periderm portion cork has both tangentially and radially elongated cells, stone cells present and no phloem fibers

(d) Ex-foliated cork, non-lignified with 2-4 layers of phellogens. 15-20 rows of phelloderm.Prominent vascular tissue.

23. An essential ingredient in the general preparation of plant tissue culture media is

(a) Auxin or naphthalene acetic acid (b) Sucrose or glucose

(c) Giberlin G_1 or gibberellin G_2 (d) Pyridoxine HCI.

24. The mefloquine, proguanil and primaquine can be effectively used in diseases produced by

(a) Mycoplasma (b) Dermatophytes

(c) Protozoa (d) Spirochaetes

25. Identify the receptor which demonstrates the fastest onset of response, when stimulated

(a) Nuclear receptors (b) Ionotropic receptors

(c) G-protein coupled receptors (d) Insulin receptor

26. One of the following drugs is converted to the corresponding deoxy nucleotide, which showscytotoxicity

(a) Dactinomycin (b) Lomustine

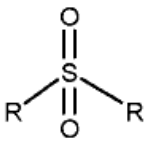
(c) Vincristiane (d) 5-Fluorouracil

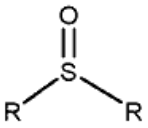
27. The compounds 2-Methyl-3-phytyl1-1, 4-naphthoquinone and 2-methyl1-3-all-trans faenesylgeranylgeranyl -1, 4-napthoquionone are commonly known as:

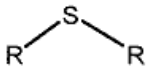
(a) Vitamin D_2 and D_3 (b) Vitamin A_1 and A_2

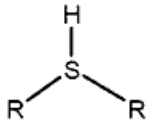
(c) Vitamin K_1 and K_2 (d) Vitamin B_1 and B_2

28. (Z)-5-Fluoro-2-methyl-1-{[p-(methyl-sulpinyl)phenyl]methylene}-1H indene-3-acetic acid, reaches peak blood levels within 2-4 hours and undergoes a complication reversible metabolismto become active. Active metabolite has the group.

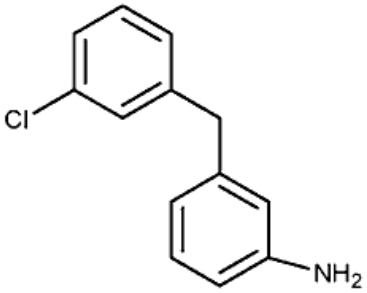
(a) 

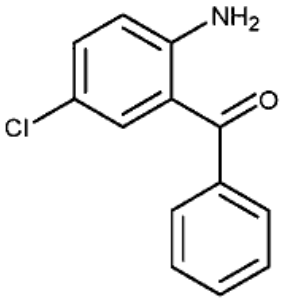
(b) 

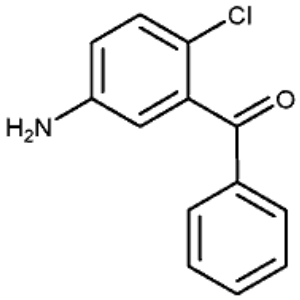
(c) 

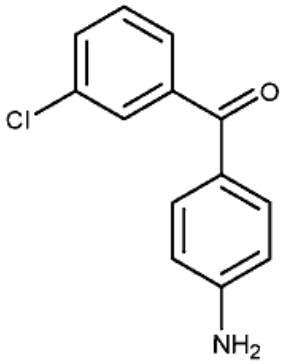
(d) 

29. An intermediate for the synthesis of benzodiazepine derivatives can be prepared by treating 4-chloroaniline with benzoyl chloride in the presence of zinc chloride as a catalyst. Identify the intermediate.

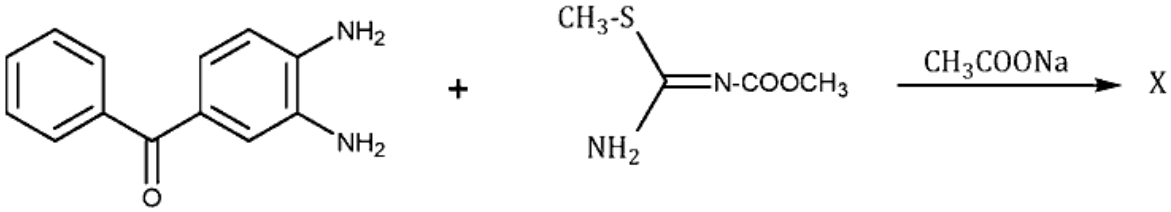
(a) 

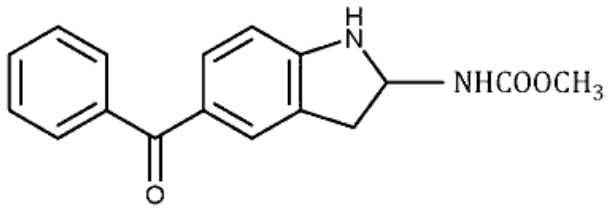
(b) 

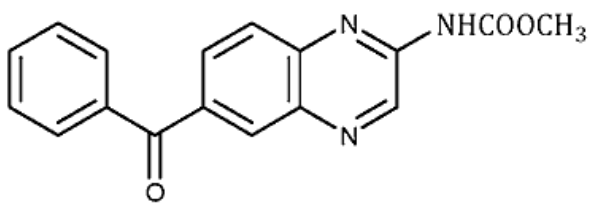
(c) 

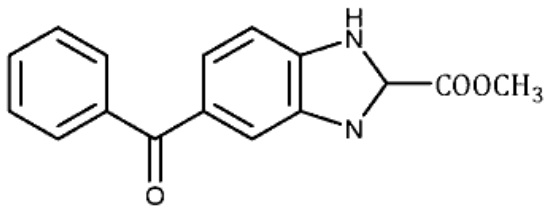
(d) 

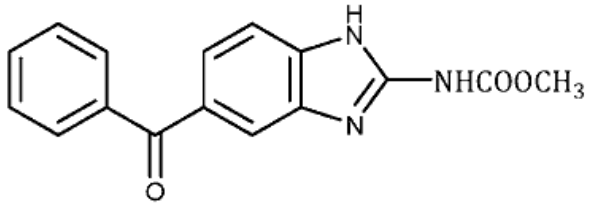
30. Find the product X in the reaction.



(a) 

(b) 

(c) 

(d) 

31. In the preparation of ointments, macrogels are used as used as

(a) Water soluble base (b) Hydrocarbon base

(c) Absorption base (d) Oleagenous base

32. An antioxidant commonly used in the formulation of a non-aqueous parenteral preparation is

(a) Thioglycollic acid (b) Ascorbic acid

(c) Sodium metabisulphite (d) Butylated hydroxyl toluene

33. Phosphatidic acid and its derivatives from liposomes because

(a) In a fully hydrated condition, they are conical in shape

(b) In a fully hydrated condition, they are cylindrical in shape

(c) They contain only non-polar moieties in their structures

(d) Their saponification values are unusually low.

34. With regard to the standards for sterile water for injection, IP, the 'residue on evaporation' limit is

(a) Higher than water for injection, IP (b) Lower than water for injection, IP

(c) Same as that of the water for injection, IP (d) No such standard is prescribed in the monograph

35. The number of peaks given by the ^{1}H NMR spectrum of 2-methyl-1-pentene is

(a) 4 (b) 5 (c) 6 (d) 3

36. In HPLC, the analytical performance improves when

(a) Particle diameter is increased (b) Particle diameter is reduced

(c) Coarser particle are paired with shorter columns (d) Low temperature is used

37. Increase in the extent of conjugation of a double bonded system results in

(a) Hyperchromic shift (b) Hypochromic shift

(c) Hypsochromic shift (d) Bathochromic shift

Q.38-54 are multipleselection items, P, Q, R, S are the options. Two of these option are correct. Combination among A, B, C and D.

38. Alkaloids derived from ornithine are

(P) Cocaine (Q) Colchicine (R) Hyosyamine (S) Emetine

(a) Q, S (b) P, R (c) S, R (d) P, Q

39. *Aloe barbadensis* has two of following characters

(P) The drug obtained iswhite in color in and has a bitter taste

(Q) The drugs is opaque, yellowish brown to chocolate brown in color and breaks with a waxy fracture

(R) The drug has a pungent odour and is amorphous under the microscope

(S) Under in the microscope, acicular crystals are visible.

(a) P, R (b) P, S (c) Q, S (d) Q, R

40. Tacrolimus is a macrolide antibiotic, which bears the following attributes

(P) Produced from *strptomyces hygroscopicus* and is chemically related to cyclosporine

(Q) Binds with cytoplasmic peptidyl-propyl-isomerase and can be useful in liver and kidney transplant.

(R) Produced from *streptomyces tsukubaensis* and is chemically, unrelated to cyclosporine

(S) An inhibitor of pyrimidine synthesis, used in rheumatoid arthritis

(a) P, Q (b) P, S (c) Q, R (d) Q, S

41. Metformin acts by two mechanisms

(P) Increasing insulin secretion (Q) Inhibiting a-glucosidase

(R) Decreasing hepatic glucose production (S) Increasing insulin action in muscle and fat

(a) P, Q (b) R, S (c) P, R (d) Q, S

42. Metabolic oxidation of carbon –nitrogen, carbon oxygen and carbon – sulphur systems principally Involves two basic types of bio-transformation processes

(P) Hydroxylation of the α-carbon atom attached directly to the heteroatom

(Q) Mixed function oxidase system also oxidizes carbon atom adjacent to carbonyl and imino functions

(R) Hydroxylation of the hetero-atom only

(S) Microsomal hydroxylation at allylic carbonatom

(a) P, R (b) P, S (c) Q, P (d) R, S

43. The silver salt sulphadiaziane, SILVADENE, is an effective topical antimicrobial agent in burns because of its two important attributes.

(P) Board spectrum of activity

(Q) Active against pseudomonas spp.

(R) The salt is only very slightly soluble and its does not penetrate the wall, instead it acts on the structure

(S) The salt is highly soluble and hence it is rapidly absorbed

(a) P, Q (b) P, S (c) Q, R (d) R, S

44. In the synthesisof chorpheniramine, two important ingredients required are

(P) 4-chloro benzyl cyanide (Q) 4-chloro pyridine

(R) 2-chloro benzyl cyanide (S) 2-chloro pyridine

(a) P,Q (b) P, S (c) Q, R (d) R, S

45. Zeta potential

(P) Is the difference in potential between the surface of the tightly bound layer and the electroneutralregion

(Q) Is the potential at the solid surface of the suspended particle

(R) Can be positive, zero negative

(S) Is the electronotherodynamic potential

(a) P, R (b) P, S (c) Q, R (d) P, Q

46. Two of official standards for uncoated tablets as per IP are

(P) Shape (Q) Friability

(R) Disintegration time (S) Uniformity of weight

(a) P, Q (b) P, S (c) Q, R (d) R, S

47. As per schedule 'O' of the Drugs and Cosmetics Rules 1945, the minimum Rider walker coefficients for Grade 1 and 3 Black disinfectant fluids are

(P) 18 (Q) 10 (R) 5 (S) 14

(a) P, R (b) Q, S (c) P, S (d) R, S

48. The IR spectrum of an organic liquid can be taken by placing it between a pair of polished plates made of

(P) NaCI (Q) $FeSO_4$ (R) KBr (S) $AlCl_3$

(a) P, Q (b) P, S (c) R, S (d) P, R

49. In gas choromatography, derivatisation is desirable to

(P) Improvethe thermal stability of compounds

(Q) Enable interaction with carrier gas

(R) Introduce a detector oriented tag into the molecular

(S) Remove contaminants

(a) P, Q (b) Q, R (c) P, R (d) P, S

50. Neutral thioaliphatic amino acid found in proteins are

(P) Methionine (Q) Valine (R) Cysteine (S) Leucine

(a) P, Q (b) P, R (c) P, S (d) R, S

51. Diazoxide, a benzothiazide derivative produces

(P) Vasoconstriction by activating ATP sensitive K^+ channel

(Q) Vasodilatation by activating ATP sensitive K^+ channel

(R) Inhibition of insulin secretion

(S) Stimulation of insulin secretion

(a) P, R (b) Q, R (c) P, S (d) Q, S

52. The principle of ELISA is based on these two observations

(P) Antibodies and antigens can attach to solid-phase supports and stillmaintain their full immunological capabilities

(Q) Antibodies complex with enzymes allowing full separation of antigen molecules

(R) Antigens and antibodies can bebonded to enzymes and resulting complexes are stillfully functional both immunologically and enzymatically

(S) Enzymatic action is crucial for converting the antigens to render them sutible for binding to antibodies

(a) P, Q (b) P, R (c) Q, R (d) Q, S

53. Which of the following are likely to be good targets for designing antihypertrnsive drugs ?

(P) H_2 histamine receptor (Q) Proton pump

(R) Calcium channel protein (S) α_2-adrenergic receptor

(a) P, Q (b) R, S (c) P, R (d) Q, S

54. The characteristic of the sabin vaccine administered orally for prevention of polio

(P) It consists of live attenuated strains of three immunological types of the poliovirus

(Q) It is generally not used in infants below 9 months of age

(R) It contains serum antibodies that are active against specific strains of poliovirus

(S) It has the risk of occasionally reverting back to virulent strains, resulting in vaccine-associated paralytic poliomyelitis

(a) P, S (b) Q, R (c) P, R (d) P, Q

Q. 55-70 ARE MATCHING EXERCISES

Match Group I with Group II and identify the correct combination

55. Mucilages are plant products formed at different parts of the plant

Group I	**Group II**
Plant part from which it is found	Example
(P) Cellwall of seed epidermis	(1) Fenugreek
(Q) Endodermis	(2) Senna
(R) Epidermis of leaf	(3) Squill
(S) Special secretory cell	(4) Linseed

(a) P-4, Q-1, R-2, S-3 (b) P-4, Q-2, R-1, S-3

(c) P-3, Q-1, R-2, S-4 (d) P-1, Q-2, R-1, S-4

56.

Group I	**Group II**
Crude Drugs	Chemical natural of their chief constituents
(Q) Ergot	(1) Imidazole alkaloids
(P) Jaborandi	(2) Steroidal compounds
(R) Kurchi	(3) Indole alkaloids
(S) Pterocarpus	(4) Condensed tannis

(a) P-3, Q-2, R-4, S-1 (b) P-3, Q-1, R-2, S-4

(c) P-3, Q-1, R-4, S-2 (d) P-3, Q-4, R-2, S-1

57.

Group I	**Group II**
Common regents used in pharmacognosy	Uses
(P) 5% aqueous chlor-zinc-iodine	(1) Disintegration of sclerenchymatous tissues
(Q) Phloroglucinol and hydrochloric acid ethanol	(2) Staining lignified wall pink or red
(R) A mixture of equal parts of ether and ethanol	(3) Removalof fixed oils and fats
(S) A mixture of equal parts of chromic acid and nitric acid	(4) Staining cellulose wall blue

(a) P-4, Q-2, R-3, S-1 (b) P-1, Q-3, R-2, S-4

(c) P-2, Q-1, R-4, S-3 (d) P-3, Q-4, R-1, S-2

58.

Group I	**Group II**
Reactions	Names
(P) n-propyl-m-tolyl ketone is converted to m-(n-butyl) toluene using NH_2-NH_2 and a base at 200° C	(1) Perkin condensation
(Q) Phenol is treated with chloroform and aqueous sodium hydroxide by which, Salicylaldehyde is formed	(2) Wolff-Kishner reduction

(R) Benzophenone and methylene triphenyle phospharane are treated and the product formed is 1,1 diphenyl ethane — (3) Wittigs reaction

(S) Benzaldehyde is treated with acetic anhydride in the presence of sodium acetate, 3 phenyl- proprnoic acid is formed — (4) Reimer-Tiemann reaction

(a) P-2, Q-4, R-3, S-1 (b) P-1, Q-3, R-4, S-1

(c) P-1, Q-3, R-4, S-2 (d) P-4, Q-3, R-1, S-2

59. **Group I** **Group II**

Name of enzyme — Description

(P) Sutilains — (1) Mixture of proteolytic enzyme obtained from the pine apple plant used for soft tissue inflammation and oedeam

(Q) Urokinase — (2) It is a tissue plasminogen activator produced by recombinant DNA Technology

(R) Alteplase — (3) Obtained from tissue culture of human kidneys and is a glycosylated serine protease consisting of two polypetptide chains connected by a single disulphide bond

(S) Bromelains — (4) A proteolytic enzyme obtained from culture of bacillus subtilis used to dissolve necrotic tissue in bruns, bed sores and ulcerated wounds.

(a) P-3, Q-4, R-2, S-1 (b) P-1, Q-3, R-4, S-2

(c) P-4, Q-2, R-3, S-1 (d) P-4, Q-3, R-2, S-1

60. **Group I** **Group II**

Physical form of substances — Rheological properties

(P) Castor oil — (1) Plastic flow

(Q) Concentrated flocculated suspension — (2) Pseudoplastic flow

(R) Liquide dispersion of methyl cellulose — (3) Dilatant flow

(S) Pastes of small deflocculated partical — (4) Newtonian flow

(a) P-4, Q-2, R-1, S-3 (b) P-3, Q-2, R-1, S-4

(c) P-2, Q-3, R-4, S-1 (d) P-1, Q-4, R-3, S-2

61. **Group I** **Group II**

(P) Crystal growth — (1) Griffin

(Q) pH scale — (2) Sorensen

(R) HLB scale — (3) DLVO theory

(S) Interparticular force — (4) Ostwald ripening

(a) P-4, Q-2, R-1, S-3 (b) P-3, Q-1, R-2, S-4

(c) P-2, Q-4, R-3, S-1 (d) P-1, Q-3, R-4, S-2

62. **Group I**

Method of purification

(P) Entrainment preventive distillation

(Q) Simple distillation

(R) Reverse osmosis

(S) Ion-exchange

Group II

Effect on water quality

(1) CFU value and endotoxin content usually increases

(2) Pyrogen free water

(3) Endotoxins and pyrogens are not removed

(4) Small organic molecules (mol.wt., approx. less than 200) are not removed

(a) P-1, Q-4, R-3, S-2

(b) P-4, Q-1, R-2, S-3

(c) P-2, Q-3, R-4, S-1

(d) P-3, Q-2, R-1, S-4

63. **Group I**

Drugs

(P) Rifabutin

(Q) Penciclovir

(R) Imiquimod

(S) Amprenavir

Group II

Mechanism

(1) Inhibition of viral DNA synthesis

(2) Inhibition of mycobacterial RNA polymerese

(3) Inhibition of HIV protease

(4) Immunomodulation

(a) P-1, Q-2, R-4, S-3

(b) P-3, Q-4, R-1, S-2

(c) P-2, Q-1, R-4, S-3

(d) P-4, Q-3, R-2, S-1

64. **Group I**

Reponses/Incidents

(P) False transmitter

(Q) St. Antony's fire

(R) Triple response

(S) Straub phenomenon

Group II

Bioactive substances

(1) Histamine

(2) Methyldopa

(3) Morphine

(4) Ergot alkaloid

(a) P-2, Q-4, R-1, S-3

(b) P-1, Q-4, R-3, S-2

(c) P-3, Q-2, R-1, S-4

(d) P-4, Q-3, R-2, S-1

65. **Group I**

Adverse effects

(P) Reye's syndrome

(Q) Hypertrichosis

(R) Grey baby syndrome

(S) Pinpoint pupil

Group II

Drugs

(1) Chloramphenicol

(2) Morphine

(3) Aspirin

(4) Minoxidil

(a) P-1, Q-2, R-4, S-3

(b) P-3, Q-4, R-1, S-2

(c) P-4, Q-1, R-2, S-3

(d) P-4, Q-3, R-2, S-1

66. **Group I**

Technique used

(P) Polarography

(Q) Potentionmetry

(R) Conductometry

(S) Amperometry

(a) P-1, Q-4, R-3, S-2

(c) P-3, Q-2, R-4, S-1

Group II

Analytical method of evaluation

(1) Potential-volume curve

(2) Current-potential

(3) Conductance-volume curve

(4) Current-volume curve.

(b) P-2, Q-1, R-3, S-4

(d) P-4, Q-1, R-2, S-3

67. **Group I**

Type of Radiation

(P) Radio frequency

(Q) UV

(R) X-ray

(S) Mid-IR

(a) P-1, Q-4, R-3, S-2

(c) P-1, Q-2, R-3, S-4

Group II

Wave length

(1) > 100 mm

(2) 200-380 nm

(3) 10 pm- 10 nm

(4) 2.5-50µm

(b) P-3, Q-2, R-1, S-4

(d) P-2, Q-1, R-4, S-3

68. **Group I**

Spraying reagents usedin Chromatographic methods

(P) $SbSI_3$ in $CHCI_3$

(Q) Bromocresol green

(R) Aniline phthalate

(S) 2,4 dinitrophenyl hydrazine

(a) P-2, Q-1, R-4, S-3

(c) P-1, Q-3, R-2, S-4

Group II

Type of substance

(1) Carboxylic acid

(2) Aldehyde or ketone

(3) Steroid

(4) Sugar

(b) P-3, Q-1, R-4, S-2

(d) P-4, Q-1, R-2, S-3

69. **Group I**

Antibiotics

(P) Erythoromycin

(Q) Doxycycline

(R) Carbenicillin

(S) Amphotericin B

(a) P-4, Q-1, R-2, S-3

(c) P-1, Q-2, R-3, S-4

Group II

Test organism for microbiological assay IP

(1) *Staphylococcus aureus*

(2) *Pseudomonyces aeruginosa*

(3) *Saccharomyces cerevisiae*

(4) *Micrococcus luteus*

(b) P-3, Q-2, R-1, S-4

(d) P-2, Q-4, R-3, S-2

70. **Group I**

Hormone

(P) Vasopressin

(Q) Oxytocin

Group II

Action

(1) Modulates extensive vasodilatation

(2) Helper hormone to corticotropic releasing hormone

(R) Bradykinin
(S) Prolactin
(3) Stimulates synthesis of components of milk
(4) Responds to suckling reflex and estradiol

(a) P-2, Q-4, R-1, S-3
(b) P-1, Q-2, R-3, S-4
(c) P-4, Q-3, R-2, S-1
(d) P-3, Q-1, R-4, S-2

Common data for questions 71-72

Scince ancient times, the coca leaves rich in cocaine, a pyschostimulant, have been used by the South Americans as a masticatory agent.

71. The alkaloid concentration in coca leaves vary from

(a) 3-4% (b) 0.7-1.5% (c) .01-0.02% (d) 9-11%

72. Cocaine, the alkaloid derived from coca leaves acts by

(a) Increasing noradrenaline synthesis
(b) Inhibiting monoamine oxidase
(c) Inhibiting catechol-O-methyl transferase
(d) Inhibiting noradrenaline re-uptake

Common data for question 73-75

Chlorambucil IP is a cytotoxic agent

73. Chlorambucil is derivative of

(a) Amino phenyl butyric acid
(b) Amino phenyl caproic acid
(c) Amino phenyl glycine
(d) Diamino diphenyl

74. Identification test prescribed in IP is : 0.4g of the drug is extracted with 10ml quantities of 2M hydrochloric acid three times. To 10ML quantity of extracts, 0.5 ml potassium mercuric iodide solution is added, which yields.

(a) Yellow coloured precipitate
(b) Yellow coloured solution
(c) Buff coloured precipitate
(d) Red coloured precipitate

75. Chlorambucil is assayed as per IP by titrating a dilute acetone solution of the drug with

(a) 0.1 M sodium hydroxide
(b) 0.1 M hydrochloric acid
(c) 0.2 M pechloric acid
(d) 0.1 M silver nitrate

Linked Answer Question: Q.76 to Q.85 carry two marks each.

Statement for linked answer Question 76 and 77

Dried stigma of crocus sativus contains several constituents

76. One of the important constituents is

(a) Picrocrocin (b) Picroside I (c) Picrasmin (d) Gymnemic acid

77. On hydrolysis, the gives a product which is responsible for the characteristics odour

(a) Crocetin (b) Saffranal (c) Quercetian (d) Crotonic acid

Statement for Linked AnswerQuestion 78 & 79

A glycosaminoglycan is found in the granules of mast cells.

78. An anticoagulant glycosaminoglycan is

(a) Warfarin (b) Heparin (c) Vitamin K (d) Aspirin

79. The anticoagulant selected above acts by

(a) Lowering the affinity for free plasminogen (b) Degrading fibrin and fibrinogen

(c) Binding to antithrombin III (d) Antagonizing co-factor function of vitamin K

Statement for Linked Answer Question 80 & 81

Prazosin, an antihypertensive drug, is prepared as follows: 2, 4-dihydroxy -6, 7-dimethoxy quinazoline is treated with $POCl_3/PCl_5$, followed by amination. The product X is treated with a reagent Y to get Prazosin.

81. The product X is

(a) 4-Amino-3-chloro-6, 7-dimethoxy quinazoline

(b) 2-Amino-4-chloro-6, 7-dimethoxy quinazoline

(c) 4-Amino-2-chloro-6, 7-dimethoxy quinazoline

(d) 4-Amino-6-chloro-2, 7-dimethoxy quinazoline

82. The reagent Y is

(a) 1-(2-Furoyl)-pyridine (b) 1-(2-Furoyl)-piperazine

(c) 1-(2-Pyridyl)-piperazine (d) 1-(2-Furoyl)-pyrimidine

Statement for Linked Answer Questions 82 & 83

The powder ofa viscosity builder is dispersed with high shear in 1/5 to 1/3 oftherequired amount of water preheated to 80^0 C to 90^0 C. Once the powder is finely dispersed, the volume is made up with ice cold water or ice. Moderate stirring causes prompt dissolution.

82. The poweris

(a) Bentonite (b) Sodium carboxymethyl cellulose

(c) Veegum (d) Methyl cellulose

83. For obtaining maximum clarity, hydration and viscosity the above solution should be cooled for about an hour to

(a) 0^0C to 10^0C (b) 25^0C (c) 50^0C (d) 35^0C

Statement for Linked Answer Question 84 & 85

ε and $A_{1cm}^{1\%}$ can be interconverted using a formula, from which its molar absorptivity or absorbance can be calculated

84. The formula is

(a) ε and $A_{1cm}^{1\%} \times$ mol.wt /1000 (b) ε and $A_{1cm}^{1\%} \times$ mol.wt /10

(c) ε and $A_{1cm}^{1\%} \times$ mol.wt /1000 (d) ε and $A_{1cm}^{1\%} \times$ mol.wt /100

85. A compound has a molecular weight of 297; an equivalent weight of 148.5 and an $A^{1\%}_{1cm}$ of 742 at 309 nm.Its moar absorptivity is

(a) 220.37 (b) 1101.87 (c) 110.18 (d) 22037.5

End of paper

ANSWER KEY GATE 2007

1-d	2-b	3-c	4-d	5-b	6-c
7-b	8-b	9-a	10-a	11-b	12-c
13-c	14-b	15-c	16-c	17-c	18-b
19-b	20-a	21-b	22-a	23-b	24-c
25-b	26-d	27-d	28-b	29-b	30-d
31-a	32-d	33-b	34-b	35-b	36-b
37-d	38-b	39-c	40-c	41-b	42-c
43-c	44-a	45-a	46-d	47-a	48-d
49-c	50-b	51-d	52-b	53-b	54-c
55-a	56-b	57-a	58-a	59-d	60-a
61-a	62-c	63-c	64-a	65-b	66-b
67-c	68-b	69-a	70-a	71-b	72-d
73-a	74-c	75-a	76-a	77-b	78-b
79-c	80-c	81-b	82-d	83-c	84-b
85-d					