GPAT QUESTION PAPER 1996 WITH ANSWER KEY

PHARMACEUTICAL SCIENCE

XL : Life science

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

Read the following instruction carefully.

1. *Write all the answer in the answer book.*
2. *This question paper contains five sections listed below.*

Section Code	*Section*
M	*Chemistry*
N	*Biochemistry*
P	*Life Science*
Q	*Microbiology*
R	*Pharmacy*

3. *Answer three Sections only. Section M is compulsory. Choose two others from the Remaining Sections.*
4. *Answer all questions in a section. Each section carries 50 marks.*
5. *Write SECTION CODES of the selected sections in the boxes provided on the cover page of the answer book.*
6. *ANSWER TO DIFFERENT SECTIONS SHOULD NOT BE MIXED WITH EACH OTHER.*
7. *Answer to question and answer to different parts of a question should appear together.*
8. *In all questions of 5 or more marks write clearly the important step in your answer. These steps carry partial credit.*
9. *Read the specific instructions given, if any, in the individual sections.*
10. *There will be no negative marking.*

NOTE:

In the year 1996, for the first time Pharmacy was including under the board heading of life science consisting of Chemistry, Biochemistry, Life science, Microbiology and Pharmacy section. According to the new rules, a student had to opt for two subjects (with Chemistry as a compulsory Subject) apart from his specialization subject. Since, this rule was abolished from the subsequence years therefore we are including the question paper of Pharmacy section only for the year 1996 as the other sections has no relevance for future preparations.

SECTION - R1

PHARMACY

R1. For each question given below four answers are provided, out of which only one is correct. Write the correct answer on the answer book by writing A, B, C or D against the corresponding subquestion number in the answer book.

1.1. Clonidine hydrochloride – IP is

(a) Monoamine oxidase inhibitor which contains in imidazoline ring system.

(b) Arterial venous vasodilator which contains in imidazoline ring system.

(c) Monoamine oxidase inhibitor which contains in Pyrimidine ring system.

(d) Monoamine oxidase inhibitor which contains in Phthalazine ring system.

1.2. Borntrager's test is performed for identification of

(a) Digitoxin (b) Reserpine

(c) Digoxin (d) Dianthrone of rhein

1.3. The electrode system employed in protentiometric titrations of aids by Non-aqueous method in basic solvents is

(a) Glass – Calomel electrodes (b) Antimony – Glass electrodes

(c) Glass – Antimony electrodes (d) Antimony Calomel electrodes

1.4. The drug NALAXONE

(a) Produces morphine like activity (b) Produces respiratory depression

(c) Induces constipation (d) Precipitates withdrawal symptoms in morphine

1.5. Phenyl alanine, Ornithine and methionine are involved in the biogenesis of :

(a) Lysergic acid (b) Reserpine

(c) L-Hyosyamine (d) Papaverine

1.6. The area under the serum concentration time-curve represents the

(a) Biologic half life of the drug (b) Amount of drug is cleared by the kidneys

(c) Amount of drug absorbed (d) Amount of drug excreted in the urine

1.7. An interference filter consist of

(a) An iron plate coated with selenium

(b) A layer of silver deposited on glass coated with MG F_2

(c) A Tungsten plated coated with silver oxide

(d) A solid sheet of glass coloured by pigment

1.8. Which of the following is the first process that must occur before a drug can became available for absorption from a tablet dosage from?

(a) Dissolution of the drug in the G. I, fluids (b) Dissolution of the drug in the epithelium

(c) Ionistation of the drug (d) Disintegration of the tablet

1.9. Propranolol

(a) Reduces myocardial oxygen consumption

(b) β – 1 receptor selective blocker

(c) Has intrinsic sympathomimetics activity

(d) Is a hypotensive agent in patients with normal blood pressure

1.10. 2-bis (2 chlorethyl) amino pre hydro 1, 3, 2 oxazaphosphorinan is an

(a) Anti-metabolite (b) Alkylating agent

(c) Anti-tubercular agent (d) Anti-arrhythmic drug

1.11. A moiety of a molecule responsible for selective absorption of radiation in a specific range is called as

(a) Auxochrome
(b) Catalyst
(c) Anti-tubercular agent
(d) Anti-arrhythmic drug

1.12. Chlordiazepoxide is synthesized from

(a) m-Chloroaniline and Benzyl chloride
(b) p-Chloroaniline and Benzyl chloride
(c) p-Chloroaniline and Benzedrine
(d) p-Nitroanline and Benzyl chloride

1.13. Tablets are placed into a coating chamber and hot air is introduced through the bottom of the chamber. Coating solution is applied through an atomizing nozzle from the upper end of the chamber. This technique is called:

(a) Sealing before sugar coating
(b) Coating by air suspension
(c) Spray-pan coating
(d) Chamber coating

SECTION - R2

R2. In the following three questions match each the items 1, 2, 3 and 4 on the left, with an appropriate item on the right and indicate the answer as for example.

2.1. Match the following terms with Phytoconstituents mentioned below:

(1) OPIUM	(A) Tropane alkaloids
(2) ERGOMETRINE	(B) Cardiac glycosides
(3) SCOPOLAMINE	(C) Latex of popy capsules
(4) GINSENOSIDES	(D) Oxytocic effect
	(E) Adaptogenic and tonic
	(F) Cyanogenetic aglycone

(a) 1-C, 2-D, 3-A, 4-E
(b) 1-A, 2-C, 3-D, 4-E
(c) 1-A, 2-C, 3-E, 4-D
(d) 1-A, 2-B, 3-C, 4-F

2.2. Formation of hard gelatin may necessitate the additives listed 1 to 4, their functions are given in A to F. Match them

(1) Diluents	(A) For preventing absorption of moisture by hygroscopic substance
(2) Protectives	(B) For increasing the bulk
(3) Glidants	(C) To prevent cross contamination
(4) Antidusting	(D) For regulating the flow
	(E) For avoiding weight variation
	(F) For Bacterial resistant

(a) 1-C, 2-D, 3-A, 4-E
(b) 1-A, 2-C, 3-D, 4-E
(c) 1-A, 2-C, 3-E, 4-F
(d) 1-B, 2-A, 3-D, 4-C

2.3. For the drugs listed 1 to 4, mechanisum of action is indicated from A to F. Match them.

(1) VINCRISTINE	(A) Macrocyclic antibiotic which inhibits DNA dependent RNA polymerase
(2) STREPTOMYCIN	(B) An antibiotic containing nitro group which binds to 50 S ribosomal subunit
(3) CHLORAMPHENICOL	(C) A dimeric indole alkaloid which binds to tumbuline, a class of protein that forms the miotic spindle
(4) RIFAMPICIN	(D) An aminoglycoside antibiotic, capable of binding To 30 ribosomal subunit
	(E) A quinoline alkaloid which inhibits the growth of Plasmodium vivax
	(F) A naphthancene antibiotic which inhibits cell wall synthesis

(a) 1-C, 2-D, 3-B, 4-A (b) 1-A, 2-C, 3-D, 4-E
(c) 1-A, 2-C, 3-E, 4-D (d) 1-A, 2-B, 3-C, 4-F

R3. Name the crude drug associated with the following diagnostically important histological character.

(1) Stratified cork
(2) Non-lignified warty trichomes
(3) Pseudoparenchyma
(4) Ellipsoidal schizolysigenous oil glands
(5) Clothing and glandular hairs

R4.

(i) Excited triplet state is more stable than the excited singlet state-why?
(ii) There are three important reactions involved in the assay of folic acid I. P. Write the equations.

R5. Complete the following reactions by giving the structural formulae of the products 1, 2, 3, 4 and 5.

(i) 4--Chloronitrobenzene $\xrightarrow{Na_2S}$ .....(1)... $\xrightarrow[H_2SO_4]{K_2Cr_2O_7}$ ....(2).... $\xrightarrow[HCl]{SnCl_2}$ .....(3).....

(ii) Triamino Pyrimidine 5-nitroso 2, 4, 8 $\xrightarrow[NaOCH_3]{C_6H_5CH_2.CN}$ .....(4).....

(iii) 3-(2-Chlorophenyl 5 methyl isooxazolyl)-4-Carboxylic acid $\xrightarrow[6APA]{SOCl_2}$ ....(5).....

R6. (i) The Cocaervation technique of microencapsulation consists of three steps. Mention them in one sentence each. http://www.xamstudy.com

(ii) Give the full from of HEPA-filter.

(iii) Define Ocusert System

R7. (i) Compare the principal pharmacological effects of $I_{A,}$ I_B and I_C anti-arrhythmic drugs. Answer in one or two sentences only.

(ii) Define:

(a) First pass effect

(b) Open one compartment model

End of paper

ANSWER KEY GPAT 1996

Section – R1

1.1	b	1.2	d	1.3	a	1.4	a
1.5	c	1.6	c	1.7	b	1.8	d
1.9	a	1.10	b	1.11	c	1.12	b
1.13	b						

Section – R2

2.1	a	2.2	d	2.3	c