

GATE-1996

PART - A Section-I (Choose The Correct Answer)

1. 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 an imidazoline ring system
- (b) Arterial venous vasodilator which contains imidazoline ring system
- (c) Monoamine oxidase inhibitor which contains Pyrimidine ring system
- (d) Monoamine oxidase inhibitor which contains 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 potentiometric titrations of acids by Non-aqueous method in basic solvent is

- (a) Glass Calomel electrodes
- (b) Antimony Glass electrodes
- (c) Glass-Antimony electrodes
- (d) Antimony-Calomel electrodes

1.4 The drug Naloxone

- (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-Hyoscymine (d) Papaverine

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

- (a) Biological 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 consists of

- (a) An iron plate coated with selenium
- (b) A layer of silver deposited on glass coated with MgF_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 become available for absorption from a tablet dosage form

- (a) Dissolution of the drug in the GI fluids
- (b) Dissolution of the drug in the epithelium
- (c) Ionisation 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 sympathomimetic activity
- (d) Is a hypotensive agent in patients with normal blood pressure

1.10 2-bis (2 chloroethyl) amino pre hydro 1, 3, 2 oxaza-phosphorine 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) Chromophore (d) Elicitor

1.12 Chlordiazepoxide is synthesized from

- (b) p-Chloroaniline and Benzyl chloride
- (a) m-Chloroaniline and Benzyl chloride
- (d) p-Nitroaniline and Benzyl chloride
- (c) p-Chloroaniline and Benzidine

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 – II (Match The Following)

1.14 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 | [P] Tropane alkaloids |
| 2. Ergometrine | [Q] Cardiac glycosides |
| 3. Scopolamine | [R] Latex of poppy capsules |
| 4. Ginsenosides | [S] Oxytocic effect |
| | [T] Adaptogenic and tonic |
| | [U] Cyanogenetic aglycone |

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

1.15 Formulation of hard gelatin may necessitate the additives listed 1 to 4, their functions is given in [P] to [U] Match them

1. Diluents [P] for preventing absorption of moisture by hygroscopic substance
 2. Protective [Q] for increasing the
 3. Glidants [R] to prevent cross contamination
 4. Antidusting [S] for regulating the flow
 [T] For avoiding weight variation
 [U] For Bacterial resistance

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

1.16 For the drugs listed 1 to 4, mechanism of action is indicated from P to U Match them

1. Vincristine [P] Macrocyclic antibiotic which inhibits DNA dependent RNA polymerase
 2. Streptomycin [Q] An antibiotic containing nitro group which binds to 50 Ribosomal subunit
 3. Chloramphenicol [R] A dimeric indole alkaloid which binds to tubulin, a Class of Protein that forms the mitotic spindle
 4. Rifampicin [S] An aminoglycoside antibiotic, capable of binding to 30 Ribosomal subunit
 [T] A quinoline alkaloid which inhibits the growth of *Plasmodium vivax*
 [U] A naphthacene antibiotic which inhibits cell wall Synthesis

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

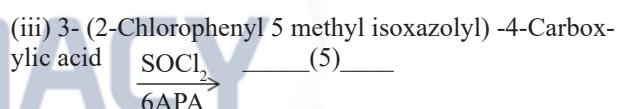
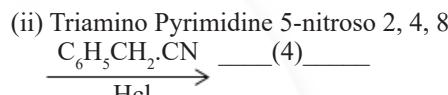
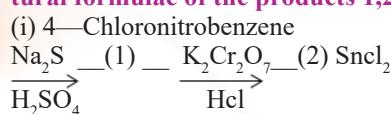
PART - B

2.1 Name the crude drug associated with the following diagnostically important histological character

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

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

2.3 Complete the following reaction by giving the structural formulae of the products 1,2,3,4 and 5



2.4 (i) The Coacervation technique of microencapsulation consists of three steps. Mention them

(ii) Give the full form of HEPA-filter
 (iii) Define Ocusert System

2.5 (i) compare the principal pharmacological effects of IA IB and Ic anti-arrhythmic drugs. Answer in one or two sentences only
 (ii) Define
 (a) First pass effect
 (b) Open one compartment model

Answer Key

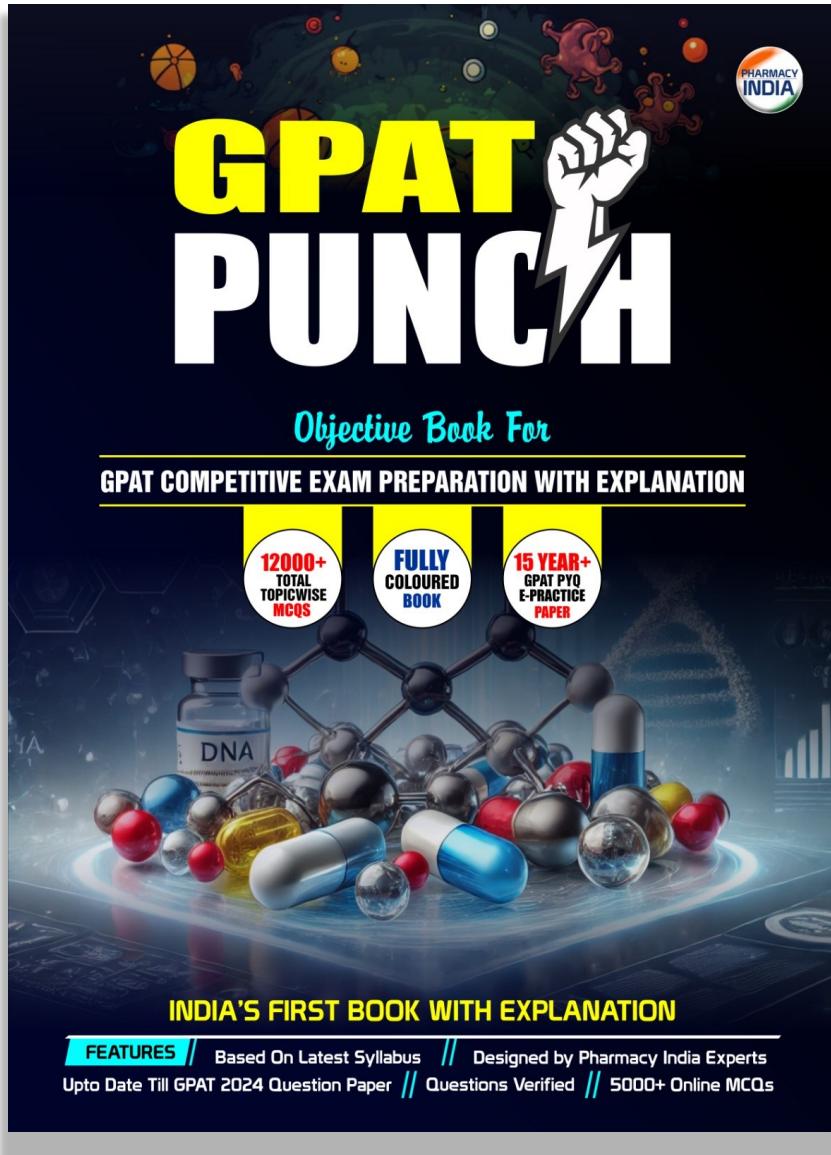
PART (SECTION - I)

| | | | | | | | | | |
|----------|----------|----------|---------|---------|---------|---------|---------|---------|----------|
| 1.1 - b | 1.2 - d | 1.3 - a | 1.4 - d | 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 | | | | | | | |

PART (SECTION - II)

| | | |
|---------|---------|---------|
| 2.1 - a | 2.2 - d | 2.3 - a |
|---------|---------|---------|

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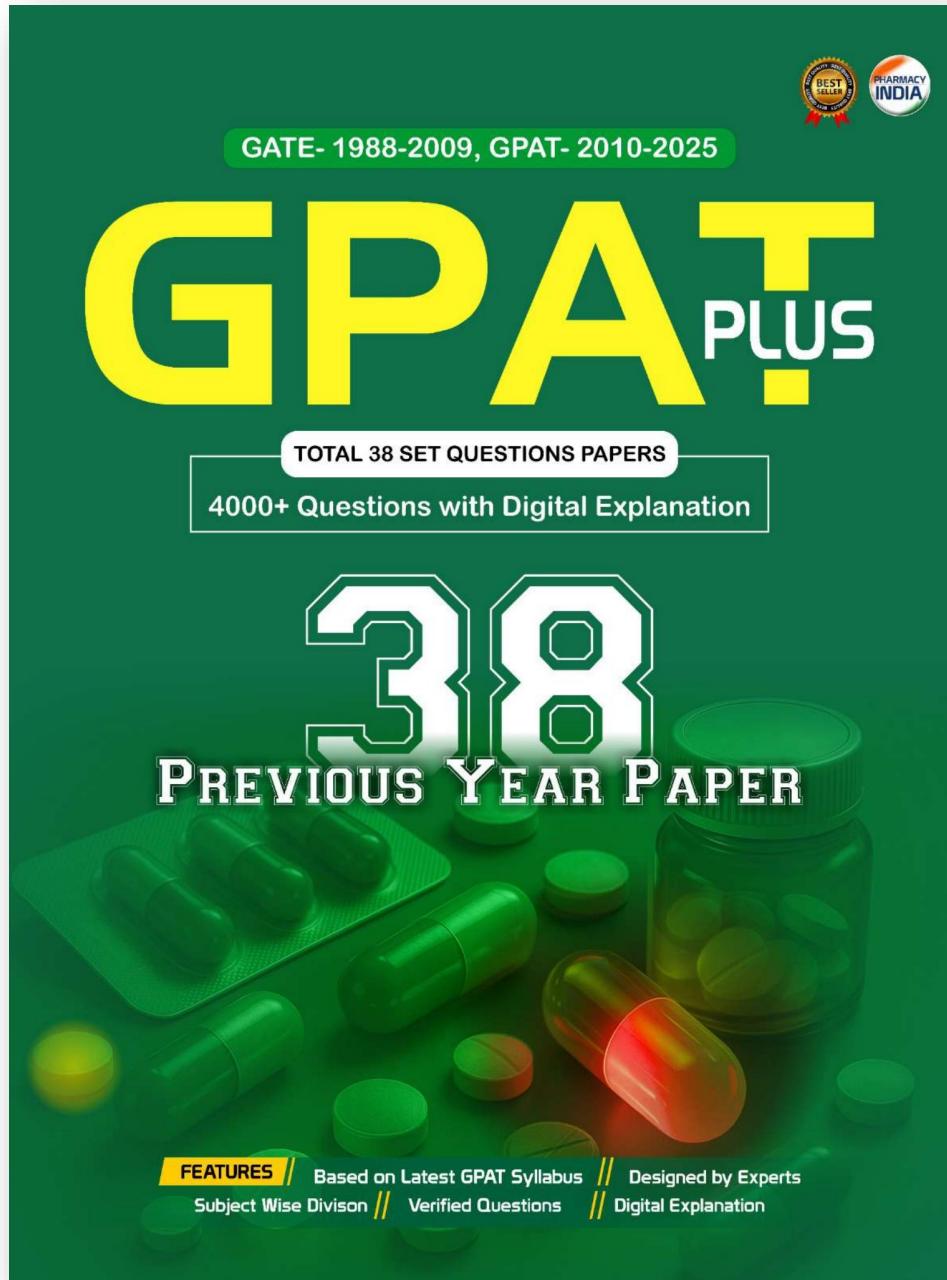
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