

## INSTRUCTIONS

## A. General :

1. This Question Booklet is your Question Paper.
2. This Question Booklet contains 16 pages (including blank pages) and has 100 questions.
3. The Question Booklet **Code** is printed on the right-hand top corner of this page.
4. The Question Booklet contains blank sheets for your rough work. No additional sheets will be provided for rough work.
5. **Clip board, log tables, slide rule, calculator, cellular phone and electronic gadgets in any form are NOT allowed.**
6. Write your **Name** and **Registration Number** in the space provided at the bottom.
7. All answers are to be marked only on the machine gradable Optical Response Sheet (ORS) provided along with this booklet, as per the instructions therein.
8. The Question Booklet along with the Optical Response Sheet (ORS) must be handed over to the Invigilator before leaving the examination hall.

## B. Filling-in the ORS :

9. Write your Registration Number in the boxes provided on the upper left-hand-side of the **ORS** and darken the appropriate bubble under each digit of your Registration Number using a **HB pencil**.
10. Ensure that the **code** on the **Question Booklet** and the **code** on the **ORS** are the same. If the codes do not match, report to the Invigilator immediately.
11. On the lower-left-hand-side of the **ORS**, write your **Name, Registration Number and Name of the Test Centre** and put your **signature** in the appropriate box with ball-point pen. Do not write these anywhere else.

## C. Marking of Answers on the ORS :

12. Each question has 4 **choices** for its answer : (A), (B), (C) and (D). Only **ONE** of them is the correct answer.
13. On the right-hand-side of **ORS**, for each question number, darken with a **HB Pencil ONLY** one bubble corresponding to what you consider to be the most appropriate answer, from among the four choices.
14. There will be **negative marking** for wrong answers.

## MARKING SCHEME :

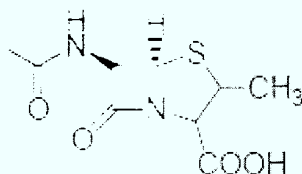
- (a) For each **correct** answer, you will be awarded **3 (Three)** marks.
- (b) For each **wrong** answer, you will be awarded **-1 (Negative one)** mark.
- (c) **Multiple** answers to a question will be treated as a **wrong** answer.
- (d) For each **un-attempted** question, you will be awarded **0 (Zero)** mark.

Name	Ganesh Kumar						
Registration Number	6	0	8	9	5	2	6

- Q.1 The vitamin essential in tissue culture medium is  
 (A) Pyridoxine (B) Thiamine (C) Nicotinic acid (D) Inositol
- Q.2 *Gingko biloba* is used for its  
 (A) Expectorant activity (B) Lipid lowering activity  
 (C) PAF antagonistic activity (D) Antidepressant activity
- Q.3 The amount of barbaloin present in *Aloe vera* is  
 (A)  $\leq 1\%$  (B)  $3.5 - 4\%$  (C)  $1 - 1.5\%$  (D)  $2 - 2.5\%$
- Q.4 Sildenafil is used for treatment of one of the following disorders :  
 (A) Systolic hypertension (B) Unstable angina  
 (C) Pulmonary hypertension (D) Hypertension due to eclampsia
- Q.5 Cardiac glycosides have the following configuration in the aglycone part of the steroid nucleus :  
 (A)  $5\alpha, 14\alpha -$  (B)  $5\alpha, 14\beta -$  (C)  $5\beta, 14\alpha -$  (D)  $5\beta, 14\beta -$
- Q.6 Quassia wood is adulterated with  
 (A) *Brucea antidysentrica* (B) *Cassia angustifolia*  
 (C) *Cinnamomum zeylanicum* (D) *Cephaelis ipecacuanaha*
- Q.7 Eugenol is present in  
 (A) Fennel (B) Tulsi (C) Cardamom (D) Coriander
- Q.8 Which one of the following drugs is prescribed for the treatment of Philadelphia chromosome positive patients with Chronic myeloid Leukemia?  
 (A) Pentostatin (B) Methotrexate  
 (C) Imatinib (D) L-Asparaginase
- Q.9 Which of the following monoclonal antibodies is prescribed for patients with non-Hodgkin's Lymphoma?  
 (A) Infliximab (B) Abciximab (C) Gemtuzumab (D) Rituximab

- Q.10 Identify the drug which is **NOT** used in the treatment of malaria caused by *Plasmodium falciparum* :
- (A) Artemisinin (B) Primaquine (C) Quinine (D) Mefloquine
- Q.11 Which one of the following drugs does **NOT** act through G-Protein coupled receptors?
- (A) Epinephrine (B) Insulin (C) Dopamine (D) TSH
- Q.12 Which one of the following drugs is most effective in preventing transmission of HIV virus from the mother to the foetus?
- (A) Lamivudine (B) Zidovudine (C) Indinavir (D) Ribavirin
- Q.13 Improvement of memory in Alzheimer's disease is brought about by drugs which increase transmission in
- (A) cholinergic receptors (B) dopaminergic receptors  
(C) GABAergic receptors (D) adrenergic receptors
- Q.14 Which of the following non-opioid analgesics is a prodrug?
- (A) Piroxicam (B) Celecoxib (C) Nabumetone (D) Ketorolac
- Q.15 Which one of the following drugs is **NOT** a typical anti-psychotic agent?
- (A) Chlorpromazine (B) Haloperidol  
(C) Risperidone (D) Flupentixol
- Q.16 Which one of the followings is a plasminogen activator?
- (A) Tranexamic acid (B) Streptokinase  
(C) Aminocaproic acid (D) None of the above
- Q.17 Myasthenia gravis is diagnosed with improved neuromuscular function by using
- (A) Donepezil (B) Edrophonium (C) Atropine (D) Pancuronium
- Q.18 Which one of the following drugs specifically inhibits calcineurin in the activated T lymphocytes?
- (A) Daclizumab (B) Prednisone (C) Sirolimus (D) Tacrolimus
- Q.19 The chemical behaviour of morphine alkaloid is
- (A) acidic (B) basic (C) neutral (D) amphoteric

Q.20 At physiological pH the following compound would be **MOSTLY** in the



- (A) cationic form (B) unionized form  
(C) zwitterionic form (D) anionic form
- Q.21 Which one of the followings is used as a mood stabilizer for bipolar disorder and also in certain epileptic convulsions?
- (A) Phenytoin (B) Lithium  
(C) Sodium valproate (D) Fluoxetine
- Q.22 An isosteric replacement for carboxylic acid group is
- (A) pyrrole (B) isoxazole (C) phenol (D) tetrazole
- Q.23 The given antibiotic is an example of ansamycins :
- (A) Roxythromycin (B) Adriamycin (C) Aureomycin (D) Rifamycin
- Q.24 For glyburide, all of the following metabolic reactions are logical **EXCEPT**
- (A) O-demethylation (B) aromatic oxidation  
(C) benzylic hydroxylation (D) amide hydrolysis
- Q.25 The effects observed following systemic administration of levodopa in the treatment of Parkinsonism have been attributed to its catabolism to dopamine. Carbidopa, can markedly increase the proportion of levodopa that crosses the blood-brain barrier by
- (A) increasing penetration of levodopa through BBB by complexation with it  
(B) decreasing peripheral metabolism of levodopa  
(C) decreasing metabolism of levodopa in the CNS  
(D) decreasing clearance of levodopa from the CNS
- Q.26 Ethambutol molecule has
- (A) two chiral centers and 3 stereoisomers  
(B) two chiral centers and 4 stereoisomers  
(C) two chiral centers and 2 stereoisomers  
(D) one chiral center and 2 stereoisomers

- Q.27 A compound will be sensitive towards IR radiation only when one of the following properties undergo transition on irradiation :
- (A) Polarizability (B) Dielectric constant  
(C) Dipole moment (D) Refractivity
- Q.28 X-ray crystallographic analysis of an optically active compound determines its
- (A) Optical rotatory dispersive power (B) Absolute configuration  
(C) Relative configuration (D) Optical purity
- Q.29 Which one of the following statements is **WRONG**?
- (A) A singlet or triplet state may result when one of the electrons from the HOMO is excited to higher energy levels  
(B) In an excited singlet state, the spin of the electron in the higher energy orbital is paired with the electron in the ground state orbital  
(C) Triplet excited state is more stable than the singlet excited state  
(D) When the electron from the singlet excited state returns to ground state, the molecule always shows fluorescence phenomenon
- Q.30 Aminotransferases usually require the following for their activity :
- (A) Niacinamide (B) Vitamin B<sub>12</sub>  
(C) Pyridoxal phosphate (D) Thiamine
- Q.31 Purity of water can be assessed by determining one of its following properties instrumentally :
- (A) pH (B) Refractivity (C) Viscosity (D) Conductivity
- Q.32 Which one of the following statements is **WRONG**?
- (A) Carbon NMR is less sensitive than proton NMR  
(B) <sup>12</sup>C nucleus is not magnetically active  
(C) Both <sup>13</sup>C and <sup>1</sup>H have same spin quantum numbers  
(D) The gyromagnetic ratio of <sup>1</sup>H is lesser than that of <sup>13</sup>C
- Q.33 In the TCA cycle, at which of the following enzyme-catalyzed steps, incorporation of elements of water into an intermediate of the cycle takes place :
- (A) Citrate synthase (B) Aconitase  
(C) Maleate dehydrogenase (D) Succinyl Co-A synthase

- Q.34 Humectants added in cosmetic preparations generally act by  
(A) hydrogen bond formation (B) covalent bond formation  
(C) complex formation (D) the action of London forces
- Q.35 In the mixing of thymol and menthol the following type of incompatibility occurs :  
(A) Chemical incompatibility (B) Therapeutic incompatibility  
(C) Physical incompatibility (D) Tolerance incompatibility
- Q.36 Bloom strength is used to check the quality of  
(A) Lactose (B) Ampoules  
(C) Hardness of tablets (D) Gelatin
- Q.37 The characteristic of non-linear pharmacokinetics include :  
(A) Area under the curve is proportional to the dose  
(B) Elimination half-life remains constant  
(C) Area under the curve is not proportional to the dose  
(D) Amount of drug excreted through remains constant
- Q.38 In the Drugs and Cosmetics Act and Rules, the Schedule relating to GMP is  
(A) Schedule M (B) Schedule C (C) Schedule Y (D) Schedule H
- Q.39 Thioglycolic acid-like compounds have applications in following type of cosmetic formulations :  
(A) Depilatory preparations (B) Epilatory preparations  
(C) Vanishing creams (D) Skin tan preparations
- Q.40 Which one of the following is a flocculating agent for a negatively charged drug?  
(A) Aluminium chloride (B) Bentonite  
(C) Tragacanth (D) Sodium biphosphate
- Q.41 The healing agent used in hand creams is  
(A) soft paraffin (B) urea  
(C) bees wax (D) stearyl alcohol
- Q.42 Measurement of inulin renal clearance is a measure for  
(A) Effective renal blood flow (B) Renal drug excretion rate  
(C) Active renal secretion (D) Glomerular filtration rate

- Q.43 Highly branched three dimensional macromolecules with controlled structures with all bonds originating from a central core are known as  
(A) cyclodextrins (B) dextrans (C) dendrimers (D) liposomes
- Q.44 Which one of the following is the commonly used bulking agent in the formulation of freeze dried low dose drug products?  
(A) Sodium chloride (B) Mannitol  
(C) Starch (D) HPMC
- Q.45 The applicability of Noyes-Whitney equation is to describe  
(A) First order kinetics (B) Zero order kinetics  
(C) Mixed order kinetics (D) Dissolution rate
- Q.46 Which filler can **NOT** be used for the preparation of tablets for amine containing basic drugs to avoid discoloration of the tablets?  
(A) Dicalcium phosphate (B) Microcrystalline cellulose  
(C) Starch (D) Lactose
- Q.47 The ability of human eye using illuminated area to detect a particle is limited to  
(A) 0.4 micron (B) 25 micron (C) 50 micron (D) 10 micron
- Q.48 What quantities of 95 % v/v and 45 % v/v alcohols are to be mixed to make 800 mL of 65 % v/v alcohol?  
(A) 480 mL of 95 % and 320 mL of 45 % alcohol  
(B) 320 mL of 95 % and 480 mL of 45 % alcohol  
(C) 440 mL of 95 % and 360 mL of 45 % alcohol  
(D) 360 mL of 95 % and 440 mL of 45 % alcohol
- Q.49 The role of borax in cold creams is  
(A) anti-microbial agent  
(B) to provide fine particles to polish skin  
(C) *in-situ* emulsifier  
(D) antioxidant

- Q.50 Choose the right combination:
- (A) Quinine, antimalarial, isoquinoline alkaloid
  - (B) Reserpine, antihypertensive, indole alkaloid
  - (C) Quantitative microscopy, stomatal number, myrrh
  - (D) Palmitic acid, salicylic acid, fatty acids
- Q.51 Triterpenoids are active constituents of
- (A) Jaborandi
  - (B) Rhubarb
  - (C) Stramonium
  - (D) Brahmi
- Q.52 Alkaloids are **NOT** precipitated by
- (A) Mayer's reagent
  - (B) Dragendorff's reagent
  - (C) Picric acid
  - (D) Millon's reagent
- Q.53 Anisocytic stomata are present in
- (A) Senna
  - (B) Digitalis
  - (C) Belladonna
  - (D) Coca
- Q.54 *Bacopa monnieri* plant belongs to the family
- (A) Scrophulariaceae
  - (B) Leguminosae
  - (C) Polygalaceae
  - (D) Rubiaceae
- Q.55 Tropane alkaloids are **NOT** present in
- (A) *Datura stramonium*
  - (B) *Erythroxylum coca*
  - (C) *Duboisia myoporoides*
  - (D) *Lobelia inflata*
- Q.56 Guggul lipids are obtained from
- (A) *Commiphora molmol*
  - (B) *Boswellia serrata*
  - (C) *Commiphora wightii*
  - (D) *Commiphora abyssinica*
- Q.57 An example of N-glycoside is
- (A) Adenosine
  - (B) Sinigrin
  - (C) Rhein-8-glucoside
  - (D) Aloin
- Q.58 One mg of Lycopodium spores used in quantitative microscopy contains an average of
- (A) 94,000 spores
  - (B) 92,000 spores
  - (C) 90,000 spores
  - (D) 91,000 spores



- Q.59 Select the correct combination of drugs for the treatment of patients suffering from Hepatitis C :
- (A) Interferon with Ribavirin (B) Interferon with Zidovudine  
(C) Interferon with Stavudine (D) Interferon with Lamivudine
- Q.60 Aliskiren acts by
- (A) inhibiting the conversion of Angiotensin I to II  
(B) inhibiting the release of rennin  
(C) inhibiting the binding of Angiotensin II to the receptor  
(D) inhibiting the action of aldosterone
- Q.61 Digitalis toxicity is enhanced by co-administration of
- (A) Potassium (B) Quinidine (C) Diuretics (D) Antacids
- Q.62 The rate limiting step in cholesterol biosynthesis is one of the followings :
- (A) LDL-receptor concentration (B) VLDL secretion  
(C) Mevalonic acid formation (D) Co-enzyme A formation
- Q.63 Which one of the following drugs is withdrawn from the market due to *torsade de pointes*?
- (A) Chlorpromazine (B) Astemizole  
(C) Haloperidol (D) Domperidone
- Q.64 Ganciclovir is mainly used for the treatment of infection caused by
- (A) Cytomegalovirus (B) Candida albicans  
(C) Herpes zoster virus (D) Hepatitis B virus
- Q.65 Identify the one rational combination which has clinical benefit :
- (A) Norfloxacin - Metronidazole (B) Alprazolam - Paracetamol  
(C) Cisapride - Omeprazole (D) Amoxycillin - Clavulanic acid
- Q.66 Stevens Johnson syndrome is the most common adverse effect associated with one of the following category of drugs :
- (A) Sulphonamides (B) Macrolides  
(C) Penicillins (D) Tetracyclines

- Q.67 Amitriptyline is synthesized from the following starting material :
- (A) Phthalic anhydride (B) Terephthalic acid  
(C) Phthalamic acid (D) Phthalimide
- Q.68 The common structural feature amongst the three categories of anticonvulsant drugs barbiturates, succinimides and hydantoins is
- (A) ureide (B) imidazolidinone  
(C) dihydropyrimidine (D) tetrahydropyrimidine
- Q.69 Nicotinic action of acetylcholine is blocked by the drug
- (A) Atropine (B) Carvedilol  
(C) Neostigmine (D) *d*-Tubocurarine
- Q.70 Chemical nomenclature of procaine is
- (A) 2-Diethylaminoethyl 4-aminobenzoate  
(B) N,N-Diethyl 4-aminobenzoate  
(C) 4-Aminobenzamidoethyl amine  
(D) 4-Amino-2-diethylaminoethyl benzoate
- Q.71 Barbiturates with substitution at the following position possess acceptable hypnotic activity :
- (A) 1,3-Disubstitution (B) 5,5-Disubstitution  
(C) 1,5-Disubstitution (D) 3,3-Disubstitution
- Q.72 Selective serotonin reuptake inhibitor is
- (A) Imipramine (B) Iproniazide (C) Fluoxetine (D) Naphazoline
- Q.73 Proton pump inhibitors like omeprazole and lansoprazole contain the following ring system :
- (A) Pyrimidine (B) Benzimidazole (C) Benzothiazole (D) Oxindole
- Q.74 A metabolite obtained from *Aspergillus terreus* that can bind very tightly to HMG CoA reductase enzyme is
- (A) Fluvastatin (B) Cerivastatin (C) Lovastatin (D) Somatostatin

- Q.75 Cyclophosphamide as anticancer agent acts as  
 (A) alkylating agent before metabolism (B) alkylating agent after metabolism  
 (C) phosphorylating agent after metabolism (D) DNA intercalating agent
- Q.76 Artemisinin contains the following group in its structure :  
 (A) an endoperoxide (B) an exoperoxide  
 (C) an epoxide (D) an acid hydrazide
- Q.77 Indicate the HPLC detector that is most sensitive to change in temperature :  
 (A) PDA detector (B) Refractive Index detector  
 (C) Electrochemical detector (D) Fluorescence detector
- Q.78 One of the following statements is **NOT** true :  
 (A) Accuracy expresses the correctness of measurement  
 (B) Precision represents reproducibility of measurement  
 (C) High degree of precision implies high degree of accuracy also  
 (D) High degree of accuracy implies high degree of precision also
- Q.79 In thiazides following substituent is essential for diuretic activity :  
 (A) Chloro group at position 6 (B) Methyl group at position 2  
 (C) Sulphamoyl group at position 7 (D) Hydrophobic group at position 3
- Q.80 Streptomycin can **NOT** be given orally for treatment of tuberculosis because  
 (A) it gets degraded in the GIT (B) it causes severe diarrhoea  
 (C) it causes metallic taste in the mouth (D) it is not absorbed from the GIT
- Q.81 In organic molecules, fluorescence seldom results from absorption of UV radiation of wavelengths lower than  
 (A) 350 nm (B) 200 nm (C) 300 nm (D) 250 nm
- Q.82 Glass transition temperature is detected through  
 (A) X-Ray diffractometry (B) Solution calorimetry  
 (C) Differential scanning calorimetry (D) Thermogravimetric analysis
- Q.83 In Gas-Liquid Chromatography, some of the samples need to be derivatized in order to increase their  
 (A) volatility (B) solubility  
 (C) thermal conductivity (D) polarizability

- Q.84 Oxidative phosphorylation involves  
(A) Electron transport system  
(B) Substrate level phosphorylation  
(C) Reaction catalyzed by succinic thiokinase in TCA cycle  
(D) None of the above
- Q.85 Coulter counter is used in determination of  
(A) particle surface area (B) particle size  
(C) particle volume (D) all of A, B, C
- Q.86 Drugs following one compartment open model pharmacokinetics eliminate  
(A) bi-exponentially (B) tri-exponentially  
(C) non-exponentially (D) mono-exponentially
- Q.87 The temperature condition for storage of drug products under cold temperature is given as :  
(A) temperature between 8°C and 25°C (B) temperature below 2°C  
(C) temperature at 0°C (D) temperature between 2°C and 8°C
- Q.88 Many xenobiotics are oxidized by cytochrome P<sub>450</sub> in order to  
(A) increase their biological activity  
(B) increase their disposition in lipophilic compartments of the body  
(C) increase their aqueous solubility  
(D) all of the above
- Q.89 The following protein/polypeptide has a quaternary structure :  
(A)  $\alpha$ -Chymotrypsin (B) Hemoglobin  
(C) Insulin (D) Myoglobin
- Q.90 Drugs in suspensions and semi-solid formulations always degrade by  
(A) first order kinetics (B) second order kinetics  
(C) zero order kinetics (D) non-linear kinetics
- Q.91 In nail polish, following polymer is used as a film-former :  
(A) Nitrocellulose (B) Polylactic acid  
(C) Hydroxypropyl methylcellulose (D) Cellulose acetate phthalate
- Q.92 Rabies vaccine (living) is prepared using  
(A) Sheep blood (B) Mice lymph (C) Horse plasma (D) Fertile eggs

- Q.93 A drug (200 mg dose administered in tablet form and as intravenous injection (50 mg dose) showed AUC of 100 and 200 microgram hr/mL, respectively. The absolute availability of the drug through oral administration is :
- (A) 125 % (B) 250 % (C) 12.5 % (D) 1.25 %
- Q.94 Geriatric population should be included in the following Phase of clinical trials
- (A) Phase I (B) Phase II (C) Phase III (D) Phase IV
- Q.95 Class 100 area is referred to
- (A) Manufacturing area (B) Aseptic area  
(C) Clean room (D) Ware house
- Q.96 How many mL of a 1:500 w/v stock solution should be used to make 5 liters of 1:2000 w/v solution?
- (A) 750 mL (B) 1000 mL (C) 1250 mL (D) 1500 mL
- Q.97 The Volume of distribution of a drug administered at a dose of 300 mg and exhibiting 30 microgram/mL instantaneous concentration in plasma shall be
- (A) 10 L (B) 100 L (C) 1.0 L (D) 0.10 L
- Q.98 It is required to maintain a therapeutic concentration of 10 microgram/mL for 12 hours of a drug having half life of 1.386 hr and Vd of 5 L. The dose required in a sustained release product will be
- (A) 600 mg (B) 300 mg (C) 30 mg (D) 60 mg
- Q.99 Which one of the following is **NOT** an ex-officio member of Pharmacy Council of India?
- (A) The Director General of Health Services  
(B) The Director of Central Drugs Laboratory  
(C) The Drugs Controller General of India  
(D) The Director of Pharmacopoeia Laboratory
- Q.100 In which of the following techniques the sample is kept below triple point?
- (A) Lyophilization (B) Spray drying  
(C) Spray congealing (D) Centrifugation

**End of the paper**

**GPAT-14/16**