

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA, VADODARA

Ph. D. ENTRANCE TEST (PET) – 27<sup>th</sup> January 2019

Signature of Invigilators

Pharmacy  
(19/44)

Roll No.

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(in figures as in Hall Ticket)

Roll No. \_\_\_\_\_

(in words)

Maximum Marks: 50

No. Of Printed Pages : 8

**Instruction for the Candidate:**

1. Write your Roll Number in the space provided on the top of this page.
2. This paper consists of **FIFTY (50)** multiple choice type questions. Each Question carries **ONE (1)** mark.
3. At the commencement of examination, the question booklet will be given to you. In the first 5 minutes, you are requested to open the booklet and compulsorily examine it as below:
  - a. To have access to the Question Booklet, tear off the paper seal on the edge of this cover page, Do not accept a booklet without sticker seal and do not accept an open booklet.
  - b. Tally the number of pages and number of questions in the booklet with the information printed on the cover page. Faculty booklets due to pages/questions missing or duplicate or not in serial order or any other discrepancy should be got replaced immediately by a correct booklet from the invigilator within the period of 5 minutes. Afterwards, neither the Question Booklet will be replaced nor any extra time will be given.
  - c. After this verification is over, the Test Booklet Number should be entered on the OMR Answer Sheet and the OMR Answer Sheet Number should be entered on this Test Booklet.
4. Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.

**Example:** (A) ● (C) (D) where (B) is correct response.
5. Your responses to the items are to be indicated on the OMR Answer Sheet under Paper – II only. If you mark your response at any place other than in the circle in the OMR Answer Sheet, it will not be evaluated.
6. Read instructions given inside carefully.
7. Rough Work is to be done in the end of this booklet.
8. If you write your Name, Roll Number, Phone Number or put any mark on any part of the OMR Answer Sheet, except for the space allotted for the relevant entries, which may disclose your identity, or use abusive language or employ any other unfair means, such as change of response by scratching or using white fluid, you will render yourself liable to disqualification.
9. You have to return the original OMR Answer Sheet to the invigilator at the end of the examination compulsorily and must not carry it with you outside the Examination Hall. You are however, allowed to carry original question booklet and duplicate copy of OMR Answer Sheet on conclusion of examination
10. Use only Blue/ Black Ball point pen.
11. Use of any calculator or log table etc., is prohibited.
12. There shall be no negative marking.



## Pharmacy

(19/44)

**Note:** This paper contains **FIFTY (50)** multiple-choice questions. Each Question carries **ONE (1)** mark.

- 01) Determine the correctness or otherwise of the following statement:
- EDTA is called hexadentate (a) as it has six points for attachment to metal (b)
- A) (a) is correct but (b) is wrong  
B) (a) is wrong and (b) is correct  
C) (a) and (b) both are right  
D) (a) and (b) both are wrong
- 02) Which drug binds to a HIV viral envelope protein preventing the conformational changes required for the fusion of viral and cellular membranes?
- A) Abacavir  
B) Adenavir  
C) Enfuvirtide  
D) Oseltamivir
- 03) Which one of the following can be blocked by Atropine:
- A) Decreased blood pressure caused by hexamethonium  
B) Increased blood pressure caused by nicotine  
C) Tachycardia caused by exercise  
D) Tachycardia caused by infusion of Acetylcholine
- 04) Milk of Magnesia can best be estimated by:
- A) Acid–base titrimetry  
B) Redox titration  
C) Nonaqueous titration  
D) complexometric titration
- 05) Beer's isn't followed if :
- A) Sample is highly refracting  
B) Sample is totally transparent  
C) Sample is coloured  
D) Sample is dissolved in chloroform
- 06) Reserpine is a typical example of :
- A) Tropane alkaloids  
B) Quinoline alkaloids  
C) Indole alkaloids  
D) Pyrimidine alkaloids
- 07) Which of following herbs is a bioavailability enhancer?
- A) Ginger  
B) Turmeric  
C) Black Pepper  
D) All of above
- 08) Fragmentation peaks in a mass spectrum can give useful information about
- A) Halogens present in the molecule  
B) Number of carbons present in the molecule  
C) Number of protons present in the molecule  
D) None of the above
- 09) The polarography can be used for quantification of a sample using
- A) Equation of polarographic wave  
B) Ilkovic equation  
C) Heyrowaski equation  
D) Oxygen wave
- 10) Normality of a 1 M sulphuric acid would be :
- A) 1N  
B) 2N  
C) 0.5N  
D) None of the above
- 11) Keller-Killiani test is used to identify the presence of:
- A) Alkaloids  
B) Sterols  
C) Saponines  
D) Glycosides
- 12) The universal detector in HPLC is basically a:
- A) UV detector  
B) PDA detector  
C) Refractive index detector  
D) MS detector
- 13) Aromatic compounds can easily be identified by their NMR absorption peak at:
- A) 2ppm  
B) 4ppm  
C) 7 ppm  
D) 10 ppm

- 14) Which of the following drug requires Therapeutic drug monitoring?  
 A) Cyclosporin  
 B) Benzylpenicillin  
 C) Clarithromycin  
 D) Metronidazole
- 15) An ideal solvent for NMR samples would be:  
 A) Ethanol  
 B) Methanol  
 C) Acetone  
 D) Carbon tetra chloride
- 16) For effective separation of a polar drug by RP-HPLC, the mobile phase must be:  
 A) Polar  
 B) Immiscible  
 C) Less viscous  
 D) Non polar
- 17) The list of Ayurveda and Unani poisonous drugs are mentioned in schedule:  
 A) C-1  
 B) G  
 C) E-1  
 D) E
- 18) The maximum eugenol content in oil of clove is obtained in the oil extracted from:  
 A) buds of cloves  
 B) Leaves of clove  
 C) Stem of clove  
 D) Fruits of clove
- 19) Bioisosteric replacement for carboxylic acid group is :  
 A) Isoxazole  
 B) Tetrazole  
 C) Phenol  
 D) Pyrrole
- 20) Which isomer of thalidomide is responsible for sedative effects?  
 A) R  
 B) S  
 C) Racemic  
 D) Meso
- 21) Hallmark of non-competitive type of inhibitor: the equilibrium constant ( $K_m$ ) and total number of binding sites ( $V_{max}$ ) changes as:  
 A)  $K_m$  is increased and  $V_{max}$  is decreased  
 B)  $K_m$  is increased and  $V_{max}$  is unchanged  
 C)  $K_m$  is unchanged and  $V_{max}$  is decreased  
 D) None of the above
- 22) Which one of the following is a non-dihydropyridine phenylalkylamine calcium channel blocker:  
 A) Isradipine  
 B) Verapamil  
 C) Nifedipine  
 D) Diltiazem
- 23) In which of the following enzyme-catalyzed steps of Krebs cycle, addition of water molecule into an intermediate of the cycle takes place?  
 A) Citrate synthase  
 B) Succinyl CoA synthase  
 C) Maleate dehydrogenase  
 D) Aconitase
- 24) Tamoxifen is  
 A) Non-steroidal triphenylethylene antiestrogenic drug  
 B) Non-steroidal triphenylethylene estrogenic drug  
 C) Non-steroidal triphenylbromoethylene antiestrogenic drug  
 D) Non-steroidal triphenylbromoethylene estrogenic drug
- 25) Find the wrong statement about purine and pyrimidine bases.  
 A) They are hydrophobic and relatively insoluble in water at the near-neutral pH of the cell  
 B) Purines have two rings in their structure, but pyrimidine bases have only one ring  
 C) At acidic or alkaline pH the bases become charged and their solubility in water decreases  
 D) At acidic or alkaline pH the bases become charged and their solubility in water increases

- 26) Chemically cisplatin is ....
- Cis*-diamminemonochloroplatinum
  - Trans*-diamminedichloroplatinum
  - Cis*-diamminetrichloroplatinum
  - Cis*-diamminedichloroplatinum
- 27) Linoleic acid is a
- 18-carbon chain with two double bonds in *cis* configuration
  - 18-carbon chain with three double bonds in *cis* configuration
  - 18-carbon chain with two double bonds in *trans* configuration
  - 18-carbon chain with three double bonds in *trans* configuration
- 28) The common structural feature among the three categories of anticonvulsant drugs barbiturates, succinimides and hydantoins is
- Imidazolidinone
  - Ureide
  - Dihydropyrimidine
  - Tetrahydropyrimidine
- 29) Gatifloxacin is
- 1-Cyclopropyl-6-fluoro-8-methoxy-7-(3-methylpiperazin-1-yl)-4-oxoquinoline-3-carboxylic acid
  - 1-Cyclopropyl-5-fluoro-8-methoxy-7-(3-methylpiperazin-1-yl)-4-oxoquinoline-3-carboxylic acid
  - (±)-9-Fluoro-2,3-dihydro-3-methyl-10-(4-methyl-1-piperazinyl)-7-oxo-7*H*-pyrido(1,2,3-*de*)-1,4-benzoxazine-6-carboxylic acid
  - (3*S*)-9-Fluoro-3-methyl-10-(4-methyl-1-piperazinyl)-7-oxo-2,3-dihydro-7*H*-[1,4]oxazino[2,3,4-*ij*]quinoline-6-carboxylic acid
- 30) As per Lipinski's rule, for an orally active drug like molecules
- No more than 5 hydrogen bond donors
  - No more than 5 hydrogen bond acceptors
  - A molecular mass greater than 500 daltons
  - An octanol-water partition coefficient log P greater than 5
- 31) Captopril is an N-acylated derivative of
- Phenylalanine
  - Histidine
  - Leucine
  - Proline
- 32) Amitriptyline is synthesized from the following starting material...
- Phthalic anhydride
  - Terephthalic acid
  - Phthalamic acid
  - Phthalimide
- 33) The mechanism of action of antidiabetic rosiglitazone is
- Insulin releasing agent
  - Increases cellular uptake of glucose
  - Reduces release of insulin
  - PPAR $\gamma$  agonist
- 34) As per the Griffin theory, the surfactant with HLB = 18 will act as:
- W/O emulsifier
  - anti-foaming agent
  - O/W emulsifier
  - Detergent
- 35) Which of the following enteric polymer is a synthetic polymer derivative?
- Zein
  - Shellac
  - HPMC phthalate
  - Eudragit L 100
- 36) Approximate capacity of size zero Hard Gelatin capsules is
- 0.3 ml
  - 0.5 ml
  - 0.7 ml
  - 0.9 ml
- 37) The preferred preservative for Ophthalmic dosage forms is
- Benzalkonium chloride
  - Phenol
  - Chlorocresol
  - Benzoic acid

- 38) A suitable anti-oxidant for water in oil emulsion is:  
 A) Ascorbic Acid  
 B) Sodium metabisulfite  
 C) EDTA  
 D)  $\alpha$ -tocopherol
- 39) The Number of Dissolution Test apparatus as per USP are  
 A) 2  
 B) 4  
 C) 5  
 D) 7
- 40) As per the Indian Patent Act, the date of a patent is :  
 A) The date of first filing  
 B) The date of filing the complete specifications  
 C) The date of examination  
 D) The date of grant
- 41) Full form of SUPAC while filing for Biowaivers is  
 A) Standardized Upgraded Process Automation Changes  
 B) Standard Undertaking for Patient Approval and Consent  
 C) Scale Up and Post Approval Changes  
 D) Systematic Understanding Of Process Analytical Computing
- 42) Example of an W/O emulsion ointment base is:  
 A) Hydrous Lanolin  
 B) Vanishing Cream  
 C) White Ointment  
 D) Vaseline
- 43) Which of these is not preferred as Aerosol Propellant?  
 A) Chlorinated hydrocarbons  
 B) Fluorinated hydrocarbons  
 C) Propane  
 D) Butane
- 44) According to the Biopharmaceutics Classification System, "Bioproblem drugs" belong to:  
 A) Class I  
 B) Class II  
 C) Class III  
 D) Class IV
- 45) Which polymer IS NOT USED in Rubber Closures for parenterals?  
 A) Polysoprene  
 B) Polybutadiene  
 C) Polystyrene  
 D) Polychloroprene
- 46) Who amongst these Is Ex-Officio Member of PCI?  
 A) Director General of Health Services  
 B) Chairman, AICTE  
 C) Secretary, Ministry of Health and Family Welfare  
 D) Chairman, University Grants Commission
- 47) A type of flow in which the viscosity increases with shear is called:  
 A) Plastic  
 B) Pseudoplastic  
 C) Dilatant  
 D) Thixotropic
- 48) The number shown in the various grades of Polyethylene glycol polymers (eg PEG 200) indicates:  
 A) Viscosity of 1 % solution  
 B) Average Molecular weight  
 C) Number of Oxyethylene groups per mole  
 D) Number of Hydroxy groups per mole
- 49) Ascorbic acid is an acid as it contains:  
 A) Phenolic group  
 B) Carboxylic acid group  
 C) enolic group  
 D) Protons as acid
- 50) The salts dissolved in water can best be estimated by:  
 A) UV spectrophotometry  
 B) Conductometry  
 C) Polarography  
 D) Polarimetry
- \*\*\*\*\*



**Rough Work:**