

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA, VADODARA

Ph. D. ENTRANCE TEST (PET) 2023

Signature of Invigilator

Paper - II  
Pharmacy

Roll.  
No.

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Maximum Marks: 50

No. Of Printed Pages: 8

Instruction for the Candidate:

1. This paper consists of **FIFTY (50)** multiple choice type questions. Each Question carries **ONE (1)** mark.
2. There is no Negative Marking for Wrong Answer.
3. A separate OMR Answer Sheet has been provided to answer questions. Your answers will be evaluated based on your response in the OMR Sheet only. No credit will be given for any answering made in question booklet.
4. Defective question booklet or OMR if noticed may immediately replace by the concerned invigilator.
5. Write roll number, subject code, booklet type, category and other information correctly in the OMR Sheet else your OMR Sheet will not be evaluated by machine.
6. Select most appropriate answer to the question and darken appropriate oval on the OMR answer sheet, with black / blue ball pen only. DO NOT USE PENCIL for darkening. In case of over writing on any answer, the same will be treated as invalid. Each question has exactly one correct answer and has four alternative responses (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.  
**Example:** (A) (B) (C) (D) where (B) is correct response.
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. Calculators, Log tables any other calculating devices, mobiles, slide rule, text manuals etc are NOT allowed in the examination hall. If any of above is seized from the candidates during examination time; he/she will be immediately debarred from the examination and corresponding disciplinary action will be initiated by the Center Supervisor as deemed fit.
10. DO NOT FOLD or TEAR OMR Answer sheet as machine will not be able to recognize torn or folded OMR Answer sheet.
11. **You have to return the 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 on conclusion of examination.



## Paper - II

### Pharmacy

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

- 01) Bioisosteric replacement for carboxylic acid group is .....  
A) Phenol  
B) Isoxazole  
C) Pyrrole  
D) Tetrazole
- 02) Virtual screening can be called as direct drug design method if....  
A) one of the filter is pharmacophore  
B) one of the filter is 2D-QSAR is used  
C) one of the filter is 3D-QSAR is used  
D) one of the filter is docking based where protein structure is used
- 03) The following statement is true for Lipinski's rule of five for a compound to show drug like properties:  
A) No more than 5 hydrogen bond donors  
B) No more than 5 hydrogen bond acceptors  
C) No more than 10 hydrogen bond donors  
D) Molecular weight more than 500
- 04) Among the following compounds .....is the least basic compound.  
A) 4-Aminotoluene  
B) B. 4-Trifluoromethylaniline  
C) 4-Chloroaniline  
D) 4-Nitroaniline
- 05) Which of the following amino acid is detected by Sakaguchi test?  
A) Tyrosine  
B) Arginine  
C) Alpha amino acid  
D) Tryptophan
- 06) Xanthoproteic test is positive in proteins containing.....  
A) Sulphur amino acids  
B)  $\alpha$ -Amino acids  
C) Aromatic amino acids  
D) Aliphatic amino acids
- 07) Selwanof's test is positive for .....  
A) Glucose  
B) Fructose  
C) Galactose  
D) Mannose
- 08) Which of the following angiotensin-II blocker does not contain tetrazole ring in their structure?  
A) Valsartan  
B) Irbesartan  
C) Candesartan  
D) Telmisartan
- 09) Which of these is the unit of yield value?  
A) dynes/cm  
B) dynes/gm.cm  
C) cm/dynes  
D) dynes/cm<sup>2</sup>
- 10) Which of the following statements is **false** for flocculated suspension?  
A) Redisperses easily  
B) Has high Sedimentation volume  
C) Has high rate of settling  
D) Shows caking
- 11) In which of the following size capsule can maximum amount of powder be filled?  
A) 1  
B) 0  
C) 00  
D) 5
- 12) Faraday Tyndall effect shown by colloidal dispersion is which type of the property?  
A) Electrical  
B) Kinetic  
C) Thermal  
D) Optical
- 13) What does an endotherm in a DSC thermogram indicate?  
A) Release of heat  
B) Decomposition of drug  
C) Degradation of drug  
D) Absorption of heat
- 14) For which application is Multiorifice Centrifugal process used?  
A) Tablet coating  
B) Checking emulsion stability  
C) Product purification  
D) Microencapsulation
- 15) Which of the following sentences is **true** for Crystalline form of a drug ?  
A) It has regular molecular arrangement  
B) It has High solubility  
C) It has High thermodynamic energy  
D) It has low Melting point
- 16) As per BCS classification, for a BCS I drug, its highest dose strength should be soluble in \_\_\_\_\_ of water across all physiological pH ranges  
A) less than or equal to 100 ml  
B) less than or equal to 250 ml  
C) more than 250 ml  
D) more than or equal to 900 ml

- 17) How much % of alcohol will be obtained by mixing 2L of 25 %, 1 L of 70% & 3L of 80% alcohol?  
 A) 40  
 B) 60  
 C) 75  
 D) 80
- 18) A minor girl is 20 weeks pregnant. Which of the following conditions **IS NOT** required for termination of pregnancy According to the Medical Termination of Pregnancy Act 1971?  
 A) Requires person trained in Obstetrics and Gynaecology  
 B) Requires consent of two registered Medical Practitioners  
 C) Requires an approved place for Medical Termination of Pregnancy  
 D) Requires consent of the pregnant girl
- 19) An example of biodegradable synthetic polymer is  
 A) Guar Gum  
 B) Poly l Lactide and Glycolide copolymer  
 C) Hydroxy Propyl Methyl Cellulose  
 D) Polyox
- 20) Sulpha drugs can be analysed by:  
 A) Complexometric titrations  
 B) Conductometric titration  
 C) Diazotization titration  
 D) Acid base titration
- 21) The electrode which can be used as a pH electrode is:  
 A) Calomel electrode  
 B) Glass electrode  
 C) Platinum electrode  
 D) Dropping mercury electrode
- 22) Carbonyl compounds can be identified by a strong peak obtained at.....by IR spectroscopy  
 A) 3200 cm<sup>-1</sup>  
 B) 2200 cm<sup>-1</sup>  
 C) 1650 cm<sup>-1</sup>  
 D) 950 cm<sup>-1</sup>
- 23) The unit of magnetic field in NMR is  
 A) Cycles/sec  
 B) Tesla  
 C) Pulse/sec  
 D) Gauss
- 24) The metabolite of benzoic acid that acts as a marker for Hepatic function test is  
 A) Uric acid  
 B) Hippuric acid  
 C) Salicyluric acid  
 D) Oxaluric acid
- 25) Which of the following is a pyrimidine antagonist?  
 A) Methotrexate  
 B) 5-Fluorouracil  
 C) 6-Mercaptopurine  
 D) Azathioprin
- 26) A reversible non-competitive inhibitor binds reversibly at a site other than the active site. This binding leads to :  
 A) Increase in K<sub>m</sub> and V<sub>max</sub> remains constant  
 B) Increase in V<sub>max</sub> and K<sub>m</sub> remains constant  
 C) Decrease in V<sub>max</sub> and K<sub>m</sub> remains constant  
 D) No change in V<sub>max</sub> and K<sub>m</sub>
- 27) Which of the following alkyl halides is most likely to undergo rearrangement in an S<sub>N</sub><sup>1</sup> reaction?  
 A) 3-Bromopentane  
 B) 2-Chloro-3,3-dimethylpentane  
 C) 3-Chloropentane  
 D) Bromocyclohexane
- 28) Glucosidic bond in sucrose is  
 A) α1-4  
 B) β1-4  
 C) α1-2  
 D) β1-2
- 29) The side chain of histidine contains  
 A) Indole ring  
 B) Phenol ring  
 C) Imidazole ring  
 D) Guanidino ring
- 30) Heterocyclic ring 'indole' is present in  
 A) Flurbiprofen  
 B) Indomethacin  
 C) Sulindac  
 D) Diclofenac
- 31) Chloroquine can be synthesized by reaction of 4-diethylamino-1-methylbutylamine with...  
 A) 4,8-dichloroquinoline  
 B) 2, 4-dichloroquinoline  
 C) 3,7-dichloroquinoline  
 D) 4,7-dichloroquinoline
- 32) Basic skeleton present in Testosterone is:  
 A) Estrane  
 B) Pregnane  
 C) Androstane  
 D) Cholane
- 33) The enzymes of the TCA cycle in a eukaryotic cell are located in the  
 A) Mitochondria  
 B) Nucleus  
 C) Plasma membrane  
 D) Lysosomal bodies

- 34) Which of the following substituent is present on quinoline ring in Pamaquine?  
 A) 6-Chloro  
 B) 7-Chloro  
 C) 6-Methoxy  
 D) 7-Methoxy
- 35) Which is correct for Quinine?  
 A) (+)8*S*,9*S*  
 B) (-)8*R*,9*R*  
 C) (-)8*S*,9*R*  
 D) (+)8*R*,9*S*
- 36) Which of the following co-factors are required for drug metabolising enzymes?  
 A) Reduced nicotinamide-adenine dinucleotide (NADH) and oxygen  
 B) NADPH and hydrogen peroxide  
 C) NADH and hydrogen peroxide  
 D) Reduced nicotinamide-adenine dinucleotide phosphate (NADPH) and oxygen
- 37) 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 $\beta$
- 38) Clonidine structure contains....  
 A) N-(2,6-Dichlorophenyl)-4,5-1*H*-imidazol-2-amine  
 B) N-(2,3-Dichlorophenyl)-4,5-1*H*-imidazol-2-amine  
 C) N-(2,6-Dichlorophenyl)-4,5-1*H*-pyrimidine-2-amine  
 D) N-(2,3-Dichlorophenyl)-4,5-1*H*-pyrimidine-2-amine
- 39) 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
- 40) Which of the following is an example of liquid Alkaloid?  
 A) Quinine  
 B) Atropine  
 C) Nicotine  
 D) Ephedrine
- 41) Which of the following herb is a source of Salicylic acid?  
 A) Arjuna bark  
 B) Willow bark  
 C) Ashoka bark  
 D) Kurchi bark
- 42) Which of the following herb is used as diuretic?  
 A) Isapgol  
 B) Turmeric  
 C) Gokharu  
 D) Digitalis
- 43) Which alkaloid is strongest base among all?  
 A) Strychnine  
 B) Colchicine  
 C) Atropine  
 D) Mescaline
- 44) Primary standard used to standardize potassium permanganate is  
 A) Arsenic trioxide  
 B) Sodium carbonate  
 C) Oxalic acid  
 D) Potassium hydrogen phthalate
- 45) Which of the Phase II biotransformation reactions does not involve initial activation of the substrate?  
 A) Glucuronidation  
 B) Glutathione Conjugation  
 C) Sulfation  
 D) Acetylation
- 46) Geriatric population should be included in the following phase of clinical trials:  
 A) Phase I  
 B) Phase II  
 C) Phase III  
 D) Phase IV
- 47) Which of the following statement about beta blockers in hypertension is correct?  
 A) Propranolol is preferred to Atenolol in elderly patients  
 B) Beta blockers should never be combined with nifedipine  
 C) Beta blockers should not be withdrawn abruptly  
 D) Beta blockers should not be combined with hydrochlorthiazide
- 48) Select the most correct statement from the following statements on Parkinsonism  
 A) Pyridoxine should be administered to patients who are on levodopa therapy  
 B) Benserazide is an anticholinergic atropine substitute used in Parkinsonism  
 C) Selegiline is a MAO-A and MAO-B inhibitor  
 D) Anticholinergic drugs are useful in parkinsonism - associated tremor

- 49) Which of the following extraction method is not suitable for thermo labile components?
- A) Percolation
  - B) Soxhlation
  - C) Maceration
  - D) Sonication
- 50) Reference compound used in NMR spectroscopy is
- A) Silane
  - B) Trimethyl silane
  - C) Dimethyl silane
  - D) Tetramethyl silane

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**Rough Work:**