



ਪੰਜਾਬ ਟੈਕਨੀਕਲ ਯੂਨੀਵਰਸਿਟੀ ਜਲੰਧਰ
PUNJAB TECHNICAL UNIVERSITY JALANDHAR

Max. Marks: 90

Time: 90 Mins.

Entrance Test for Enrollment in Ph.D. Programme

Important Instructions

- > Fill all the information in various columns, in capital letters, with blue/black ball point pen.
- > Use of calculators is not allowed.
- > All questions are compulsory. No negative marking for wrong answers.
- > Each question has only one right answer.
- > Questions attempted with two or more options/answers will not be evaluated.

Stream (Engg./Arch./Pharm./Mgmt./App.Sci./Life Sci.)	Pharmacy
Discipline / Branch	Pharmacy
Name	
Father's Name	
Roll No.	Date
Signature of Candidate	
Signature of Invigilator	

1. Crown thickness of tablet is measured by
 - a) Micrometer
 - b) Hydrometer
 - c) Pycnometer
 - d) None of above
2. Angle of repose is measured by
 - a) Fixed funnel method
 - b) Cup plate method
 - c) Both of the above
 - d) None of the above
3. Which one of these is a carcinogenic
 - a) Mannitol
 - b) Saccharin
 - c) Sucrose
 - d) All the above
4. Nature of propellant is determined by
 - a) Karl Fisher Method
 - b) Gas Chromatography
 - c) UV method
 - d) None of the above
5. Intradermal injection refer to the injection into the
 - a) Muscle mass
 - b) Subcutaneous tissue
 - c) Spinal fluid

- d) Skin layer (superficial)
- 6. According to USP, coarse particle passes through sieve no
 - a) 120
 - b) 40
 - c) 80
 - d) 20
- 7. Hardness of tablet is measured by
 - a) Pfizer tester
 - b) Strong cobb
 - c) Monsanto
 - d) All the above
- 8. In first order, $t_{1/2}$ is
 - a) $1/K$
 - b) $b) K$
 - c) $2K+1$
 - d) $0.693/K$
- 9. The HLB can be calculated by formula
 - a) $20 (S/A)$
 - b) $E+P/5$
 - c) E/S
 - d) $20 (1-S/A)$
- 10. Surfactants are characterized by the presence of
 - a) Water and fat solubilizing groups in the same molecule
 - b) Only negative charges
 - c) Only positive charges
 - d) None of the above
- 11. Sorbitol is mainly used as
 - a) Solubilizer
 - b) Flavouring agent
 - c) Viscosity enhancer
 - d) Humectant
- 12. Lecithin produces which of emulsion
 - a) O/ W
 - b) W/O
 - c) Unstable
 - d) Stable
- 13. If a drug has a very small volume of distribution V_d , it is likely that this drug
 - a) Has a short biological life
 - b) Does not accumulate in various tissues or organ
 - c) Will not be effective
 - d) Has a long biological life
- 14. The instrument used for counting and sizing of particle is
 - a) Coulter counter
 - b) Microscope
 - c) Hempel burette
 - d) Helium densitometer

15. The term bioavailable fraction F refers to
- Bioavailable dose/ administered dose
 - Administered dose/ bioavailable dose
 - Bioavailable dose F / D
 - None of above
16. Half life for first order photolysis of cefotaxime solution containing 150 mg drug is 50 min. How long will it take for the drug to decompose to 20% of its original amount.
- 119 min
 - 116 min
 - 120 min
 - 114 min
17. Which test measures the liquification time of rectal suppositories
- Melting range test
 - pH test
 - Softening test
 - Dissolution test
18. Which granulator is used to prepare granules and coated particles under high vacuum
- Topo Granulator
 - CF Granulator
 - Day Nauta Mixer-Processor
 - Double Cone Granulator
19. Which is not the characteristic of non-linear pharmacokinetics?
- AUC \propto dose
 - Elimination $t_{1/2}$ may increase at high dose
 - Ratio of metabolites formed changes with increased dose
 - Amount of drug excreted in the urine is not proportional to the dose
20. Pharmacists monitoring drug therapy would typically be checking all of the following except
- Proper utilizing of medicine
 - Drug-drug interaction
 - Allergy contraindication
 - Appropriate diagnosis
21. Which one of the following is a prodrug
- Enalapril
 - Enalaprilat
 - Esalaprilic acid
 - None of above
22. Betadine contain
- 5% of available iodine in complex form
 - 10% of available iodine in complex form
 - 20% of available iodine in complex form
 - 2% of available iodine in complex form
23. IUPAC name for metronidazole is
- 2-methyl-5- nitroimidazole-1-ethanol
 - 4-methyl-5 nitroimidazole—ethanol

- c) 2-methyl-5-nitroimidazole-1-methanol
 - d) 2-ethyl-5-nitroimidazol-1-ethanol
24. Cisplatin, a anticancer drug, chemically known as
- a) Cis-diammine dichloroplatinum
 - b) Cis-diammine monochloroplatinum
 - c) Trans-diammine dichloroplatinum
 - d) Cis-diammine trichloroplatinum
25. Tamoxifen is
- a) Estrogenic drug
 - b) Antiestrogenic drug
 - c) Anticancer drug
 - d) Antimalarial drug
26. The end point of complexometric titrations is shown by means of
- a) pH meter
 - b) pM indicator
 - c) Colorimeter
 - d) Acid-base indicators
27. DDT consists chiefly of 1,1,1 trichloro-2, 2-di (4 chlorophenyl) ethane and it is synthesized by treatment of chlorobenzene with
- a) Acetaldehyde
 - b) Chloral
 - c) Benzaldehyde
 - d) Cinnamaldehyde
28. Most of the alkaloids are assayed by
- a) Extraction of total alkaloids
 - b) Acidimetric assay
 - c) Alkalimetry assay
 - d) Potentiometric method
29. Each radionuclide disintegrates at a characteristic rate depending on the number of
- a) Molecule
 - b) Neutrons
 - c) Atoms
 - d) Electrons
30. In gel chromatography solutes are separated according to their-
- a) Adsorbents
 - b) Molecular size
 - c) Polarities of eluants
 - d) Charge of particles
31. Potassium permanganate is an oxidizing agent most commonly used in the analysis known as
- a) Alkalimetry
 - b) Gravimetry
 - c) Volumetry
 - d) Iodometry
32. For recording ^1H NMR spectrum the most commonly useful reference compound is

- a) CDCl_3
 - b) DMSO-d_6
 - c) D_2O
 - d) TMS
33. Resolution of a spectrophotometer is
- a) its wavelength range
 - b) Its capacity for its continuous use
 - c) Its power to gather light according to source
 - d) its ability to distinguish adjacent absorption bands
34. Karl fisher reagent used in aquametry is a solution of
- a) Bromine and potassium iodide
 - b) Sodium thiosulphate and iodine
 - c) Sodium nitrite and HCL
 - d) Iodine and sulphur dioxide in pyridine and methanol
35. Lignocaine HCL is officially assayed by
- a) Potentiometric titration
 - b) Non-aqueous titration
 - c) Completometric titration
 - d) Acid base titration
36. Evan blue is a dye used -
- a) As indicator in titration of alkaloids
 - b) As a pharmaceutical aid for coloring tablets
 - c) To determine blood volume
 - d) As a bladder irrigation agent
37. The wavelength source of NMR spectrometer is
- a) Gonimeter
 - b) High voltage generator
 - c) Klystron oscillatory
 - d) Radiofrequency oscillator
38. UV absorption range is
- a) 300-500nm
 - b) 200-800 nm
 - c) 400-700nm
 - d) 200-400nm
39. Confirmation of drugs are commonly determined by
- a) NMR
 - b) NMI
 - c) pH determination
 - d) Mass spectrometry
40. Enrich's reagent is
- a) Bismuth iodide solution
 - b) p-Dimethyl aniline solution in alcohol
 - c) p-Dimethyl amino-benzaldehyde solution
 - d) p-Dimethyl aniline solution in methanol
41. Dihydroergotamine
- a) Causes vasodialation

- b) Exerts its actions by binding to specific ergotamine receptor
 - c) Is useful in treating acute migraine headache
 - d) Is useful for maintaining uterine muscle tone during pregnancy
42. Which one of the following statements concerning COX-2 inhibitors is correct?
- a) The COX-2 inhibitors show greater analgesic activity than traditional NSAIDs
 - b) The COX-2 inhibitor decrease platelet function
 - c) COX-2 inhibitors show anti-inflammatory activity similar to that of the traditional NSAIDs
 - d) The COX-2 inhibitors are cardioprotective
43. Which of the following drugs specifically inhibits calcineurin in the activated T-lymphocytes?
- a) Azathioprine
 - b) Sirolimus
 - c) Mycophenolate mofetil
 - d) Tacrolimus
44. Neurotopenia develops in a patient undergoing cancer chemotherapy. Administration of which one of the following agent would accelerate recovery of neurophils counts
- a) Leucovorin
 - b) Filgrastim
 - c) Prednisone
 - d) Vitamin B12
45. Chills, fever and muscle aches are common reactions to which one of the following antiviral drugs
- a) Acyclovir
 - b) Ganciclovir
 - c) Interferon
 - d) Ribavirin
46. Sulphonamides increase the risk of neonatal kernicterus because they
- a) Compete for bilirubin binding sites on plasma albumin
 - b) Diminish the production of plasma albumin
 - c) Increase the turnover of red blood cells
 - d) Inhibit the metabolism of bilirubin
47. A 28 year old man returns home from a holiday in the Far East and complains of three days of dysuria and a purulent urethral discharge. Gonorrhoea was diagnosed to him. Which of the following is appropriate treatment?
- a) Ceftriaxone IM
 - b) Penicilline G IM
 - c) Gentamicin IM
 - d) Vancomycin IV
48. Which of the following drug causes post antibiotic effect
- a) Ciprofloxacin
 - b) Azithromycin
 - c) Streptomycin
 - d) Rifampin
49. Which of the following is used as first line drug for the treatment of typhoid
- a) Ciprofloxacin

- b) Cotrimaxazole
 - c) Chloramphenicol
 - d) Ampicilin
50. Metallic taste” is a side effect of the following drug-
- a) Metronidazole
 - b) Levamisole
 - c) Albendazole
 - d) Thiobendazole
51. Which one of the following is true for a drug whose elimination from plasma shows first order kinetics?
- a) The half life of the drug is proportional to the drug concentration in plasma
 - b) The amount eliminated per unit of time is constant
 - c) The rate of elimination is proportional to the plasma concentration
 - d) A plot of drug concentration versus time is a straight line
52. Which of the following statements most accurately describes a system having spare receptors
- a) The number of spare receptors determines the maximum effect
 - b) Spare receptors are sequestered in the cytosol
 - c) A single drug receptor interaction results in many cellular response elements being activated.
 - d) Spare receptors are active even in the absence of agonist
53. Which one of the following is characteristic of parasympathetic stimulation
- a) Decrease in intestinal motility
 - b) Inhibition of bronchial secretion
 - c) Contraction of sphincter muscle in the iris of the eye (miosis)
 - d) Contraction of sphincter of urinary bladder
54. The choice of drug to treat cerebral malaria is
- a) Mepacrine
 - b) Amodiaquine
 - c) Quinine
 - d) Primaquine
55. Which one of the following is a short acting hypnotic
- a) Phenobarbital
 - b) Diazepam
 - c) Thiopental
 - d) Flurazepam
56. Which one of the following neuroleptics has been shown to be a partial agonist at the D2 receptor
- a) Aripiprazole
 - b) Clozapine
 - c) Haloperidol
 - d) Risperidone
57. Digitalis has profound effect on myocytes intracellular concentration of Na^+ , K^+ and Ca^{2+} . These effects are caused by digitalis inhibiting:
- a) Na^+/K^+ -ATPase of the myocyte membrane

- b) Cardiac phosphodiesterase
 - c) Cardiac Beta 1 receptor
 - d) Ca²⁺ATPase of the sarcoplasmic reticulum
58. A 70 year old man had a myocardial infarct. Which one of the following would be appropriate prophylactic antiarrhythmic therapy
- a) Lidocaine
 - b) Metoprolol
 - c) Quinidine
 - d) Verapamil
59. Antidote of organo phosphorous poisoning is
- a) Nitrous oxide
 - b) Atenolol
 - c) Atropine
 - d) tubocurarine
60. The ability to reduce insulin resistance is associated with which one of the following classes of hypoglycemic agents?
- a) Meglitinides
 - b) Sulphonylureas
 - c) Alpha-glucosidase inhibitor
 - d) Thiazolidinedones
61. Osteoporosis is a major side effect caused by the glucocorticoids. It is due to their ability to-
- a) Increase the excretion of calcium
 - b) Inhibit absorption of calcium
 - c) Stimulate the HPA axis
 - d) Decrease production of prostaglandins
62. Which of the following agents interferes with most of the cytochrome P450 enzyme and thus leads to many drug-drug interaction
- a) Famotidine
 - b) Cimetidine
 - c) Sucralfate
 - d) Ondanstron
63. IUPAC name for papaverine is
- a) 4,5- dimethoxy-1- veratryl isoquinolone
 - b) 3,4-dimethoxy-1- veratryl isoquinolone
 - c) 6,7-dimethoxy-1- veratryl isoquinolone
 - d) 5,6-dimethoxy-1- veratryl isoquinolone
64. Fructose is obtained from
- a) Sucrose
 - b) Cellulose
 - c) Inulin
 - d) Glucose
65. Saponification value is defined as
- a) Number of milligrams of potassium hydroxide required to neutralize the free acids and saponify the ester contain in 1gms of fats

- b) Number of grams of potassium hydroxide required to neutralize the free acids and saponify the ester contain in 1gms of fats
 - c) Number of micrograms of potassium hydroxide required to neutralize the free acids and saponify the ester contain in 1gms of fats
 - d) None of the above
66. Which one of these is immunomodulator
- a) Panax ginseng
 - b) Taxus
 - c) Guggual
 - d) Camptothica
67. The term Garbling defined as
- a) Removal of sand and dirt from the crude drug
 - b) Removal of stem in lobelia
 - c) Removal of stalls in cloves
 - d) Removal of extraneous matter, not constituting drug
68. Powder ginger can be best analysed with the help of
- a) Physical test
 - b) Chemical test
 - c) Fibre
 - d) Lycopodium spore method
69. The expanded flower of clove is known as
- a) Mother clove
 - b) Clove stalk
 - c) Blown clove
 - d) None of above
70. Shilajit is a
- a) Mineral drug
 - b) Herbal drug
 - c) Semisynthetic drug
 - d) Herbo-mineral drug
71. Wagner's test is used to detect the presence of
- a) Steroid
 - b) Alkaloid
 - c) Glycoside
 - d) Terplane
72. In congestive heart failure, digitalis glycosides are used because it increases-
- a) Heart rate
 - b) Force of myocardial contraction
 - c) Venous pressure
 - d) Cardiac filling pressure
73. R_f value will always be
- a) Above one
 - b) Between zero and 1
 - c) Less than one
 - d) Less than zero

74. The principle alkaloid of belladonna is
a) N-methyl pyrrolidine
b) Hyoscine
c) Hyoscyamine
d) Scopoletin
75. The half life of ^{14}C is
a) 8.8 Seconds
b) 20 minutes
c) 5000 years
d) 500 hours
76. Vincristine is used for
a) Cytotoxic property
b) Hypertension
c) Haemorrhage
d) Migraine
77. Dragendorff reagent is a combination of
a) KI + Bismuth nitrate
b) KI + I_2
c) KI + HgCl_2
d) KI + Cl_2
78. The calcium oxalate crystal in Belladonna is
a) Cluster
b) Rosette
c) Microphenoidal
d) None of above
79. The stomata in the Senna leaf
a) Rubiaceous
b) Anomocytic
c) Dicytic
d) Anisocytic
80. Neurotoxicity is most common side effect of
a) Rauwolfia serpentina
b) Quinine HCL
c) Aswagandha
d) Ginseng
81. Reserpine give violet red colour with
a) H_2SO_4
b) KOH
c) Vanilin in acetic acid
d) None of above
82. Which one of the following is a flavonoid
a) Emetin
b) Hesperidin
c) Digoxin
d) Amygdalin
83. Vittae are filled up of-

- a) Tannins
 - b) Fixed oils
 - c) Volatile oils
 - d) Aleurone grains
84. *Nardostachys jatamansi* belongs to the family
- a) Valerianaceae
 - b) Euphorbiaceae
 - c) Combretaceae
 - d) Violaceae
85. The conversion of an amino acid to a sugar is
- a) Hydrolysis
 - b) Carboxylation
 - c) Glycolysis
 - d) Glucogenesis
86. A normal value of glucose in blood is
- a) 250-350 mg%
 - b) 200-250 mg%
 - c) 100-200 mg%
 - d) 80-120 mg%
87. The mantoux test uses
- a) Old tuberculin
 - b) Diphtheria toxin
 - c) Serum antigen
 - d) Polysaccharide antigen
88. The most common causative agent of Bacterial pneumonia is
- a) *Staphylococcus aureus*
 - b) *Escheria coli*
 - c) *Streptococcus pneumoniae*
 - d) *Mycoplasma pneumoniae*
89. In the official bioassay of Erythromycin the strain used is
- a) *Bacillus subtilis*
 - b) *Micrococcus luteus*
 - c) *Salmonella typhi*
 - d) *Escherichia coli*
90. An example of synthetic antibiotic is
- a) Benzyl penicillin
 - b) Chloramphenicol
 - c) Cloxacillin sodium
 - d) Carbenicillin