



# 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. Use Blue/Black ball point pen for attempting the questions.
- All questions are compulsory. No negative marking for wrong answers.
- To attempt a question, make a tick mark (✓) at the right option/answer.
- Each question has only one right answer.
- Questions attempted with two or more options/answers will not be evaluated.

Subject (Engg./Arch./Pharm./Mgmt./Sciences)

**PHARMACY**

Discipline / Branch

**PHARMACY**

Name

Father's Name

Roll No.

Date : **10-07-2010**

Signature of Candidate

Signature of Invigilator

Q.1 Polyploidy means

- (a) Addition of one chromosome
- (b) Possession of three or more sets of chromosome
- (c) Submicroscopic changes in DNA material
- (d) Gross structural changes

Q.2 Which of the following statement is incorrect for histamine

- (a) Contract bronchial smooth muscle
- (b) Stimulate sensory nerve endings in the skin
- (c) Relax gastrointestinal smooth muscle
- (d) Stimulate gastric acid secretion

Q. 3 Commercial citric acid is produced by the microbial culture of

- (a) *Circinella umbellata*
- (b) *Calonectria decora*
- (c) *Aspergillus niger*
- (d) *Rhizopus nigricans*

Q. 4 Salbutamol does not

- (a) Function as selective  $\beta_2$  agonist
- (b) Dilates the bronchi
- (c) Relax the pregnant uterus
- (d) Selectively stimulates cardiac  $\beta_1$  receptors

Q. 5 Insulin stimulate lipogenesis by increasing the activity of

- (a) Acetyl-CoA carboxylase
- (b) Lactate dehydrogenase
- (c) Glycogen phosphorylase
- (d) Galactose-1-phosphate-uridyl transferase

Q.6 Which 5-HT receptor agonist is used in the management of migraine

- (a) Ketanserin
- (b) Ergotamine
- (c) Sumatriptan
- (d) Methysergide

- Q.7 Nitrazepam can be synthesized from  
(a) 2-Bromo-5-amino benzophenone  
(b) 2-Nitro-2-chloro acetophenone  
(c) 2-Amino-5-nitro cyclohexanone  
(d) 2-Amino-5-nitro benzophenone
- Q.8 Beta lactam ring in case of clavulanic acid is fused with  
(a) Oxazolidine system  
(b) Thiazolidine system  
(c) Thiadiazole system  
(d) Oxathiolane system
- Q. 9 Leu-enkephalin is:  
(a) A structural analogue of morphine  
(b) Peptide transmitter that causes hyperalgesia  
(c) Synthesized from the precursor proopiomelanocortin  
(d) A structural analogue of pethidine
- Q.10 A water insoluble resin that is used as coating material in microencapsulation process is  
(a) Polyvinyl alcohol  
(b) Silicone  
(c) Hydroxy ethyl cellulose  
(d) Polyvinylpyrrolidone
- Q. 11 One of the following is used as a pH dependent controlled release excipient  
(a) Ethyl cellulose  
(b) Glyceryl monostearate  
(c) Povidone  
(d) Hydroxy propyl methyl cellulose phthalate
- Q 12. Prazosin act as antihypertensive via  
(a) Blockade of calcium channels.  
(b) Inhibition of angiotensin converting enzyme.  
(c) Antagonism of alpha1-adrenoceptors  
(d) Inhibition of transmitter release from noradrenergic nerve terminals
- Q.13 In cholesterol biosynthesis which intermediate is formed between 5-pyrophosphomevalonic acid and 3, 3-dimethylallyl pyrophosphate  
(a) Farnesyl pyrophosphate  
(b) Isopentenyl pyrophosphate  
(c) Geranyl pyrophosphate  
(d) Squalene
- Q. 14 Nitrous oxide is used in anesthetic  
(a) Rapidly induces stage III anaesthesia  
(b) Is extremely soluble in blood  
(c) Is a potent analgesic  
(d) Relaxes skeletal muscle
- Q. 15 Serotonin synthesis is inhibited by  
(a) Ondansetron  
(b) Methysergide  
(c) Imipramine  
(d) Fenclonine
- Q.16 IUPAC name of cortisone is  
(a) 11,17,21-trihydroxypregn-4-ene-3,20-dione  
(b) 11 $\beta$ , 17,21-trihydroxypregn-1,4-diene-3,20-dione  
(c) 17  $\alpha$ , 21-dihydroxy-4-pregnene-3,11,20-trione  
(d) 17,21-dihydroxypregn-1,4-diene-3,11,20-trione
- Q 17. Barbituates produce:  
(a) Respiratory depression in high doses  
(b) Physical and psychological dependence  
(c) Hangover effects with used as hypnotics  
(d) All of the above
- Q. 18 Which of the following statement is in correct regarding bromocriptine  
(a) An ergot derivative  
(b) A dopamine agonist  
(c) A prolactin antagonist  
(d) Orally absorbed

- Q19. Meperidine can be synthesized by the initial reaction of benzylcyanide with
- N,N-(bis-2-chloroethyl)-N-methylamine
  - Ethylbis-( $\beta$ -chloroethyl)N-benzylamine
  - Ethylbis-( $\beta$ -chloroethyl)carbamate
  - All of above
- Q. 20 Gentamicin is obtained from
- Micromonospora purpurea*
  - Streptomyces griseus*
  - Bacillus subtilis*
  - Streptomyces spheroids*
- Q. 21 Which of the following statements about aspirin is incorrect
- Causes sweating by a direct action on autonomic postganglionic nerves
  - Acts in fever to reset the hypothalamic thermostat
  - Not antagonise the hyperthermia of exercise
  - Cause renal papillary necrosis when administered in large doses over several years
- Q. 22 Which one of the following is a synthetic immunostimulant
- Bestatin
  - Azimexon
  - Ubiquinones
  - Amphotericin B
- Q.23 Choose the correct chemical name for Prazosin
- 2-[4-(2-furanyl)carbonyl-1-piperazinyl]-6,7-dimethoxy-4-quinazolinamine
  - 6,7-dimethoxy-2-[4-(tetrahydrofuran-2-ylcarbonyl)piperazin-1-yl]quinazolin-4-amine
  - 2-{4-[(2,3-dihydro-1,4-benzodioxin-2-yl)carbonyl]piperazin-1-yl}-6,7-dimethoxyquinazolin-4-amine
  - [4-(4-amino-6,7-dimethoxyquinazolin-2-yl)piperazin-1-yl]-(oxolan-2-yl)methanone
- Q. 24 Which of the following is hydrazine MAO-inhibitor
- Cyclopropyl amine
  - Meclobemide
  - Selegiline
  - Phenelzine
- Q. 25 Chlorpromazine do not causes
- Constipation
  - Hypersalivation
  - Parkinsonian syndrome
  - Urinary retention
- Q. 26 Indian Melissa oil is obtained from
- Cymbopogon citrates*
  - Pinus roxburghii*
  - Carom carvi*
  - Anethum graveolens*
- Q 27. Anticonvulsant, retgabine primarily act on
- Calcium channel
  - Sodium channel
  - Potassium channel
  - GABA-benzodiazepine receptor
- Q 28. In nuclear magnetic resonance (NMR), the chemical shift is expressed in one of the following units
- Amperes
  - Tesla
  - cm
  - parts per million
- Q 29. 5-Hydroxytryptamine
- Decrease peristalsis
  - Increase gastric acid secretion
  - Release from platelets causes coronary spasm and variant angina
  - Metabolized by MAO-B enzyme

- Q 30. Insufficient spreading of the coating solution before drying in causes of tablet coating process causes
- (a) Cracking
  - (b) Hazing
  - (c) Blistering effect
  - (d) Picking effect Orange peel effect
- Q 31. Effect of acetylcholine on the heart is
- (a) Decreased force of contraction
  - (b) Slowed rate of conduction through the AV node
  - (c) Slowed rate of firing of the SA node
  - (d) All of above
- Q 32. A powder having Carr's consolidation index of more than 30% then the type of powder flow is
- (a) Fair passable
  - (b) Good
  - (c) Excellent
  - (d) Poor
- Q 33. Beta-endorphin is
- (a) Synthesised in the pituitary
  - (b) A respiratory stimulant
  - (c) Synthesised from pro-dynorphin
  - (d) Metabolised to form met-enkephalin
- Q 34. Which one of the following is reducing type antioxidant
- (a) Sodium metabisulfite
  - (b) Butyl hydroxytoluene
  - (c) Tocopherols
  - (d) All of above
- Q 35. Conjugation reactions in the body results in a drug becoming
- (a) More lipophilic
  - (b) Less polar
  - (c) More polar and less toxic
  - (d) More lipophilic, less polar and more toxic
- Q. 36 Which one of the following substance will decrease the surface tension of the water
- (a) Sucrose
  - (b) Ethanol
  - (c) Sodium chloride
  - (d) Lecithin
- Q. 37 Indomethacin inhibits the synthesis of:
- (a) Prostacyclin
  - (b) Substance P
  - (c) Arachidonic acid
  - (d) Leukotriene A<sub>4</sub>
- Q. 38 Pharmacologically aminophylline act as
- (a) Bronchodilator
  - (b) Vasodilator
  - (c) Phosphodiesterase inhibitor
  - (d) All of the above
- Q. 39 In case of Flocculated suspension the flow type is
- (a) Plastic
  - (b) Pseudoplastic
  - (c) Newtonian
  - (d) Dilatant
- Q. 40 Which of the following statements about atropine is correct
- (a) It is a sympathomimetic
  - (b) It is a sympatholytic
  - (c) It is a parasympatholytic
  - (d) It is a parasympathomimetic
- Q. 41 Citalopram
- (a) Is a selective serotonin reuptake inhibitor
  - (b) Inhibit the reuptake of noradrenaline
  - (c) Is a beta adrenoreceptor blocker
  - (d) Is a beta adrenoreceptor agonist

- Q. 42 Poise is a unit of  
(a) Force  
(b) Viscosity  
(c) Surface tension  
(d) Solubility
- Q. 43 Biologically L-asparaginase enzyme is obtained from  
(a) *Escherichia coli*  
(b) *Clostridium histolyticum*  
(c) *Saccharomyces cerevisiae*  
(d) *Bacillus subtilis*
- Q. 44 The following are all antagonists of serotonin except  
(a) Quetiapine  
(b) Clozapine  
(c) Cyproheptadine  
(d) Ebastine
- Q. 45 As per I.P., powder is graded as "Fine Powder" if it passes through sieve  
(a) 22  
(b) 44  
(c) 85  
(d) 120
- Q. 46 Which of the following causes arterial and bronchial constriction and platelet aggregation  
(a) Prostaglandin D<sub>2</sub>  
(b) Prostaglandin E<sub>2</sub>  
(c) Thromboxane A<sub>2</sub>  
(d) Prostaglandin E<sub>1</sub>
- Q.47 Which of the following is not selective  $\alpha_1$  receptor agonist  
(a) Xylometazoline  
(b) Eformoterol  
(c) Methoxamine  
(d) Phenylephrine
- Q. 48 Antioxidant that is commonly used in lipstick preparation  
(a) Butylated hydroxyanisole  
(b) Ascorbic acid  
(c) Tocopherols  
(d) Sodium metabisulfite
- Q. 49 Boric acid is added in the preparation of a shampoo containing beta naphthol because it  
(a) Increases the stability of the shampoo  
(b) Increases the solubility of beta naphthol  
(c) Act as antimicrobial  
(d) Act as foaming agent
- Q. 50 Starting material for the synthesis of pentoxifylline is  
(a) Ethyl acetoacetate  
(b) Ethyl mandelate  
(c) Cyanoacetic acid  
(d) Cyanoacetamide
- Q. 51 Which one of the following statements is incorrect  
(a) Isoniazide may cause peripheral neuropathy  
(b) Colchicine is used for the treatment of gouty arthritis  
(c) Electroconvulsive therapy may be used in the treatment of depression  
(d) Chlorpromazine can induce vomiting
- Q. 52 The intravenous injection of carbachol in an atropinized dog may produce a rise in blood pressure because carbachol  
(a) Potentiates the pressor effects of noradrenaline  
(b) Has some direct sympathomimetic actions  
(c) Has nicotinic actions  
(d) Delays the uptake of noradrenaline

- Q. 53. Initial step in the synthesis of Mefloquine is
- (a) Reaction of o-trifluoro methylaniline with Ethyl-4,4,4-trifluoro acetoacetate
  - (b) Reaction of 4-chloro-N-(6-hydroxy)-(1,1-biphenyl)3-yl-acetamide with 1-trifluoroacetylmethyl pyridinium bromide
  - (c) Reaction of o-trifluoro methylaniline with 1-trifluoroacetylmethyl pyridinium bromide
  - (d) Reaction of m-chloroaniline with Ethylacetoacetate
- Q. 54 Which of the following statements is incorrect
- (a) In general most drugs are made more polar by metabolism
  - (b) Acidic drugs are ionised to a greater extent in an acidic environment
  - (c) Basic drugs are ionised to a greater extent in an acidic than in a basic environment
  - (d) Lipid soluble drugs are readily absorbed across mucous membranes
- Q. 55 Which of the following is amidine containing local anesthetic
- (a) Pramoxine
  - (b) Phenacaine
  - (c) Dipiperdon
  - (d) Diclonine
- Q. 56 Aspirin may precipitate asthma in sensitive subjects because it
- (a) Has beta adrenoceptor blocking activity
  - (b) Releases histamine from mast cells
  - (c) Increases the formation of leukotriene D4 in lung tissue
  - (d) Decreases the threshold of bronchial reactivity to prostaglandin  $F_{2\alpha}$
- Q. 57 Noyes-Whitney equation is used to describe
- (a) Dissolution rate
  - (b) Elimination rate constant
  - (c) Absorption rate constant
  - (d) Zero order kinetics
- Q. 58 Which of the following receptor/mechanism is involved in the regulation of blood pressure
- (a) Renin angiotensin system
  - (b) Benzold-Jarish reflexes
  - (c) J-receptor
  - (d) All of above
- Q. 59 The signs of poisoning with organophosphate insecticides do not include
- (a) Bronchoconstriction
  - (b) Muscle fasciculation
  - (c) Mydriasis
  - (d) Intestinal spasm
- Q. 60 Thorn apple leaf is an another name of
- (a) *Datura stramonium*
  - (b) Hyoscyamus
  - (c) Duboisia
  - (d) Pilocarpus
- Q. 61 Drug of choice for trigeminal neuralgia is
- (a) Carbamazepine
  - (b) Clopidogrel
  - (c) Phentolamine
  - (d) Amiloride
- Q. 62 Which of the following oleo-gum-resin is collected in goat skin
- (a) Balsam of tolu
  - (b) Storax
  - (c) Myrrh
  - (d) Guggul

- Q. 63 Porphyrias is related to the abnormality in  
(a)  $\alpha$  and  $\beta$  chains  
(b) Methemoglobin reductase enzyme  
(c) Aminolevulinic acid synthase enzyme  
(d) Uroporphyrinogen synthase enzyme
- Q. 64 Which of the following drug is effective in the management of HIV infection  
(a) Rimantadine  
(b) Ganciclovir  
(c) Zidovudine  
(d) Cytarabine
- Q. 65 Microscopically which of the following bark show lignified and tangential arranged phloem fibers alternatively with sieve tubes  
(a) Cascara  
(b) Kurchi  
(c) Cinchona  
(d) Cinnamon
- Q. 66 Which of the following is not a side effect of sulfonamides  
(a) Stevens-Johnson syndrome  
(b) Toxic epidermal necrolysis  
(c) Ototoxicity  
(d) Agranulocytosis
- Q. 67 Tachyphylaxis is observed in case of  
(a) Aspirin  
(b) Dothiepin  
(c) Ephedrine  
(d) Lacosamide
- Q. 68 Which of the following drug is biologically obtained from a fungus  
(a) Storax  
(b) Ergot  
(c) Ipomoea  
(d) Cantharides
- Q. 69 Resins from *Commiphora* species like *Commiphora roxburghii* and *Commiphora molmol* is used as adulterant in  
(a) Colophony  
(b) Boswellia  
(c) Guggul  
(d) Benzoin
- Q. 70. An ideal suspension is one whose sedimentation volume is  
(a) Zero  
(b) More than one  
(c) Equal to one  
(d) Less than one
- Q. 71 Drug of choice for status epilepticus is  
(a) Lamotrigine  
(b) Diazepam  
(c) Topiramate  
(d) All of above
- Q. 72 Which of the following drug show thickened, pitted and lignified trichomes under microscope  
(a) Nux vomica  
(b) Podophyllum  
(c) Cinnamon  
(d) Quassia
- Q. 73 Which of the following is an anionic surfactant  
(a) Sodium lauryl sulfate  
(b) Benzalkonium chloride  
(c) Cetylpyridinium chloride  
(d) Polyethoxylated tallow amine
- Q. 74. Which of the following is drug is used for the management of Huntington's disease  
(a) Benserazide  
(b) Donepezil  
(c) Tetrabenazine  
(d) Entacapone

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- Q. 75 Gaultheria oil is also called as
- (a) Geranium oil
  - (b) Dinkum oil
  - (c) Chenoposan
  - (d) Teaberry oil
- Q. 76 Tacrolimus is a/an
- (a) Immunostimulant
  - (b) Immunosuppressant
  - (c) Neuroprotector
  - (d) Cardioprotector
- Q. 77 When the distribution of globules is not uniform in an emulsion, then the state is called as
- (a) Creaming
  - (b) Breaking
  - (c) Coalescence
  - (d) Caking
- Q. 78 MTP inhibitors
- (a) Reduces blood glucose level
  - (b) Reduces plasma cholesterol level
  - (c) Enhances memory
  - (d) Enhances brain catecholamine levels
- Q. 79 A second order reaction follows pseudo-first order reaction, when the concentration of
- (a) Two reactants is high
  - (b) One reactant is higher than the other
  - (c) Two reactants is low
  - (d) None of above
- Q. 80 Psycho-stimulant containing morpholine nucleus
- (a) Phentermine
  - (b) Pemoline
  - (c) Phenmetrazine
  - (d) Fenfluramine
- Q. 81 Hydrolysis of a drug can effectively be controlled by
- (a) Removal of water
  - (b) Decreasing solubility
  - (c) Buffer
  - (d) Complexation
- Q. 82 Acetylcholinesterase inhibitor that is used for the diagnosis of myasthenia gravis is
- (a) Neostigmine
  - (b) Pyridostigmine
  - (c) Edrophonium
  - (d) Rivastigmin
- Q. 83 Which one of the following is  $\alpha_1$  selective adrenergic blocker
- (a) Tamsulosin
  - (b) Yohimbine
  - (c) Clonidine
  - (d) Phenylephrine
- Q. 84 Andreasen apparatus is designed to determine
- (a) Stability of an emulsion
  - (b) Viscosity
  - (c) Flow of liquids
  - (d) Particle size
- Q. 85 Antipsychotic agent that is a piperidinoethyl derivative
- (a) Thioridazine
  - (b) Haloperidol
  - (c) Fluphenazine
  - (d) Prochlorperazine
- Q. 86 In the Drugs & Cosmetics Act and rules, the Schedule relating to clinical trials of new drug is
- (a) Schedule M
  - (b) Schedule X
  - (c) Schedule J
  - (d) Schedule Y
- Q. 87 Nature of a drug that binds to the human  $\alpha_1$  glycoprotein in blood is
- (a) Acidic
  - (b) Basic
  - (c) Neutral
  - (d) Non-ionic



Q. 88 Drug which is not effective in bipolar disorder

- (a) Lithium carbonate
- (b) Lamotrigine
- (c) Amineptine
- (d) Sodium valproate

Q. 89 Specific antidote in paracetamol poisoning is

- (a) N-acetyl-p-benzoquinonimine
- (b) N-acetylcysteine
- (c) Diacetyl-monoxime (DAM)
- (d) Flumazenil

Q. 90 Steroidal glycoalkaloid is present in

- (a) *Dipteryx oppositifolia*
- (b) *Fagopyrum esculentum*
- (c) *Ammi visnaga*
- (d) *Solanum khasianum*