

23242

3 Hours / 80 Marks



20111

Seat No.

--	--	--	--	--	--	--	--	--	--

- Instructions* –
- (1) All Questions are Compulsory.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.
 - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any **SIX** of the following :

30

- a) Discuss development of pharmacy profession in India.
- b) What are different types of containers commonly used in pharmacy? Write in brief about glass containers.
- c) Define preservatives. Write its types with examples and uses.
- d) Define size reduction. Write in detail about ball mill.
- e) Enlist excipients in tablet. Define sustain release tablet, Extended release tablet, fast dissolving tablet multi layered tablet.
- f) Draw a layout design of pharmaceutical manufacturing plant. Write its sections and activities.
- g) Define Novel drug delivery system. How will you classify it? Write in brief about examples and challenges in Novel drug delivery system.

2. Attempt any **TEN** of the following :

30

- a) Define quality control, quality assurance and CGMP.
- b) Give in brief the method of preparation of smallpox vaccine.
- c) Describe the method of preparation of effervescent granules.
- d) Define ointment. Write classification of ointment bases.
- e) How will you differentiate between a hard gelatin capsule and soft gelatin capsule?
- f) Define extraction. Write classification of extraction.
- g) Draw a well labelled diagram of F.B.D. write its principle.
- h) Draw a well labelled diagram of Triple roller mill. Write its advantages and disadvantages.
- i) Define pharmaceutical aid-write role of colouring, flavoring and sweetening agents.
- j) Write about career opportunities in pharmacy.
- k) Write short note on Indian pharmacopeia.

P.T.O.

**3. Attempt ALL of the following :**

- a) Define extended-release tablet.
- b) Define elixir
- c) Write full form of USP (U.S.P.)
- d) Define container
- e) The disintegration time for coated tablet is _____ minutes.
- f) What is use of Non-staining Iodine ointment.
- g) Which is the most commonly used vehicle in eye drops?
- h) Define Pessaries.
- i) Name any two preservatives.
- j) The rate of filtration is _____ proportional to the surface area of filter media.
- k) Hammer mill work on principle of _____.
- l) In cyclone separator the powder is separated depending on its
 - i) Particle size
 - ii) Density of particle
 - iii) Shape of powder
 - iv) Particle size and density
- m) Sublimation of water from ice phase to gas phase is known as _____
- n) The _____ drugs cannot be filled in hard gelatin capsule.
- o) Dusting powder is dispensed in _____ container.
- p) Gum acacia is used as _____ in emulsion.
 - i) Solvent
 - ii) Solute
 - iii) Emulsifying agent
 - iv) Colourant
- q) Solution is stored in _____
 - i) Wide mouth bottle
 - ii) Narrow mouth bottle
 - iii) Both i) and ii)
 - iv) None of above
- r) Name two identification test for emulsion.
- s) Solutions are which type of liquids?
 - i) Bi-phasic
 - ii) Monophasic
 - iii) Suspension
 - iv) Other than these
- t) What is the use of glycerin in elixir?
 - i) Preservative
 - ii) Vehicle
 - iii) Colouring agent
 - iv) Flavouring agent

23242

3 Hours / 80 Marks



20112

Seat No.

--	--	--	--	--	--	--	--

- Instructions* –
- (1) All Questions are Compulsory.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any SIX of the following:

30

- a) Draw the structure of chlorpromazine hydrochloride give its IUPAC name, therapeutic uses, formulations and brand names.
- b) Draw the structure, IUPAC name, uses, formulations, and brand names of propranolol.
- c) Enlist various sources of impurities in pharmaceuticals. Write any 4 effects of impurities.
- d) Write uses of the following drugs:
 - i) Ketoconazole
 - ii) Chloroquine
 - iii) Norfloxacin
 - iv) Remdesivir
 - v) Pretomanid
- e) Enlist two examples and uses for each of the following -
 - i) Medicinal gases
 - ii) Dental Products
- f) Define Antibiotics. Classify antibiotics based on chemical structure.
- g) Explain complexometric titrations and Acid-base titrations.

2. Attempt any TEN of the following:

30

- a) Enlist any 3 α -adrenergic blockers and any 3 β -adrenergic blockers.
- b) Classify Anti-arrhythmic agents with examples.
- c) Explain the principle and procedure involved in the limit test for sulphates.
- d) Classify Non-steroidal anti-inflammatory agents with suitable examples.
- e) Explain principle and reactions in the Assay of Ferrous sulfate.
- f) Draw the structure of Metformin, write its uses and enlist brand names.
- g) Classify Anti-depressants with examples. Draw the structure of Imipramine.
- h) Draw the structure of Isoniazid, write its IUPAC name and enlist any 2 brand names.
- i) Write uses of -
 - i) Chloramphenicol
 - ii) Streptomycin
 - iii) Azithromycin.
- j) Draw the structure of 5-Fluorouracil and enlist its uses and write its storage condition.
- k) Draw the structure of Frusemide and give its storage condition and uses.

P.T.O.

**3. Attempt ALL of the following:**

- a) Write the use of lead acetate cotton plug in a limit test for arsenic.
- b) Draw structure of Furan ring.
- c) Pyrimidine ring contains two nitrogen atoms at _____ and _____ position.
 - i) 1 and 2
 - ii) 1 and 4
 - iii) 1 and 3
 - iv) 2 and 3
- d) Name any 2 anticonvulsant drugs.
- e) Mordant Black is used in _____ type of titration.
 - i) Acid-Base
 - ii) Redox
 - iii) Oxidation
 - iv) Complexometric
- f) Draw structure of Pyridine ring.
- g) Which antacid produce carbon di-oxide?
 - i) Aluminum hydroxide
 - ii) Calcium carbonate
 - iii) Magnesium hydroxide
 - iv) All of these
- h) Choose INCORRECT statement (s) -
 - a) Heterocyclic rings are not aromatic.
 - b) Thiazole have oxygen and nitrogen as hetero atoms.
 - c) Pyrrole is five-membered heterocyclic ring.
 - i) a only
 - ii) b only
 - iii) a and b
 - iv) a, b and c
- i) Enlist any two examples of cathartics.
- j) Fill in the blank.
Captopril contains _____ heterocyclic ring.
- k) Choose INCORRECT statement (s) -
 - a) Chlorpromazine is used in the treatment of Schizophrenia.
 - b) Risperidone is first generation typical anti-psychotic.
 - c) Phenobarbitone is used to induce epilepsy in rats.
 - i) a only
 - ii) b only
 - iii) b and c
 - iv) a and b
- l) Enlist the uses of Isosorbide dinitrate.
- m) Enlist example of anti-cancer agent from anti metabolites.
- n) The following analgesic lacks anti-inflammatory action
 - i) Ibuprofen
 - ii) Paracetamol
 - iii) Diclofenac Sodium
 - iv) Piroxicam
- o) Name one high ceiling diuretic.
- p) Which of the following is an inhibitor of cyclooxygenase.
 - i) Aspirin
 - ii) Pethidine
 - iii) Pentazocin
 - iv) All of these
- q) Name any 2 tetracyclines.
- r) The following is a anticholinergic agent.
 - i) Prazosin
 - ii) Phentolamine
 - iii) Yohimbine
 - iv) Atropine
- s) Draw the structure of Dapsone.
- t) Which of the following drug is direct acting cholinomimetic agent?
 - i) Pyridostigmine
 - ii) Physostigmine
 - iii) Acetyl Choline
 - iv) Parathion

23242

3 Hours / 80 Marks



20113

Seat No.

- Instructions* –
- (1) All Questions are Compulsory.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any SIX of the following:

30

- a) Explain pharmacological system of classification of crude drug with merits and demerits.
- b) Define drug evaluation. Enlist different microscopical evaluation parameters. Explain any three leaf constants used for evaluation of leaf.
- c) Write biological source, chemical constituents and uses of Black pepper and Rauwolfia.
- d) Define oxytocic drug. Give synonym B.S. chemical constituent and uses of Ergot.
- e) Enlist different traditional system of medicine and describe in brief Ayurveda system of medicine.
- f) Define and classify Nutraceuticals with examples. Give any four therapeutic applications of nutraceuticals.
- g) Give biological source, chemical constituent, commercial preparation, therapeutic and cosmetic use of Sandalwood oil.

2. Attempt any TEN of the following:

30

- a) Define pharmacognosy, who, when coined the term pharmacognosy?
- b) Define drug adulteration. Describe any two methods of drug adulteration with example.
- c) Define volatile oil. Describe any two isolation methods of volatile oil.
- d) Define antidiabetic drug. Write biological source, chemical constituent of gymnema.
- e) Write names of drug having following chemical constituents.
 - i) Fenchone
 - ii) Emetine
 - iii) Quinine
 - iv) Caffeine
 - v) Catechine
 - vi) Papain
- f) Name the drug which gives following test positive
 - i) Match stick test
 - ii) Modified borntrager test
 - iii) Killer-Killani-test
- g) Write chemical constituents and uses of
 - i) Isapghula
 - ii) Vinca
 - iii) Vasaka
- h) Give ideal properties of surgical dressing.

P.T.O.



- i) Explain role of medicinal and aromatic plants in national economy.
- j) Define and classify herbal formulations with suitable examples.
- k) Define phytoconstituents and describe general test for identification of alkaloids. (any two)

3. Attempt **ALL** of the following:

20

- a) The reasons for drug adulteration includes
 - i) Scarcity of drug
 - ii) High price of drug
 - iii) Drugs sold illegally
 - iv) All of the above
- b) Define 'Ash Value'.
- c) Goldbeater's skin test is performed for identification of
 - i) Tannin
 - ii) Resin
 - iii) Fixed oil
 - iv) Alkaloid
- d) Name chemical test for identification of cardiac glycosides.
- e) The substance which increase evacuation of bowel is called as _____.
- f) Which part of the plant is used as drug for Ephedra and Belladonna?
- g) Jesuits bark is synonym of _____ drug.
- h) _____ is the drug belongs to Apocyanace family.
 - i) Cinchona is used as _____.
 - j) Give name of drugs belongs to the families of umbelliferae and zingiberaceae.
- k) Which drug having synonym 'Indian Saffron'
 - i) Coca
 - ii) Benzoin
 - iii) Vinca
 - iv) Turmeric
- l) Define diuretic with example.
- m) Neem belonging to _____ family.
 - i) Rubiaceae
 - ii) Meliaceae
 - iii) Liliaceae
 - iv) Zingiberaceae
- n) In the preparation of silk, the cocoons are heated at _____.
- o) Define Bhasma.
- p) Sodhana and Marana are the steps involved in manufacturing of
 - i) Churna
 - ii) Taila
 - iii) Bhasma
 - iv) Leha
- q) Define dietary fiber with example.
- r) Define prebiotic with one example.
- s) Write main chemical constituents of Aloe vera.
- t) Write two cosmetic uses of Lavender oil.

23242

3 Hours / 80 Marks



20114

Seat No.

--	--	--	--	--	--	--	--

- Instructions* –
- (1) All Questions are Compulsory.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any SIX of the following: **30**

- a) Describe Internal structure of the heart with a diagram.
- b) Define joint and classify. Name the bones of axial skeleton.
- c) Define blood. Describe its composition and function.
- d) Give composition and function of saliva and write any six functions of liver.
- e) Describe the physiology of urine formation. Draw a well labelled diagram of nephron.
- f) Draw a sagittal section of eye and explain its parts.
- g) Describe the structure of spinal cord with neat and labelled diagram.

2. Attempt any TEN of the following: **30**

- a) Explain nervous tissue.
- b) Which part of the cell is called as power house of cell? Why?
- c) Define anemia. Explain its types.
- d) Define the term
 - i) Cardiac output
 - ii) Blood pressure
 - iii) Stroke volume
- e) Explain structure and function of lymph node.
- f) Write composition and function of pancreatic juice.
- g) Define the term
 - i) Tidal volume
 - ii) Residual volume
 - iii) Vital capacity
- h) Describe menstrual cycle.
 - i) Which gland is called as endocrine and exocrine? Why?
 - j) Define hormone. Enlist all the endocrine glands with their hormones in the body.
- k) Write the effect of parasympathetic stimulation on
 - i) Eye
 - ii) Salivary gland
 - iii) Urinary bladder

P.T.O.

3. Attempt ALL of the following:

- a) Name the 2nd cranial nerve.
- b) The blood vessel which carry oxygenated blood from the lung to heart is _____.
- c) Name the muscles of respiration.
- d) Which hormone is secreted by testis?
- e) Name the four fundamental taste.
- f) Which neurotransmitter is responsible for muscle contraction?
- g) Name the bones of elbow joint.
- h) What are heart sound?
- i) Define anatomy and physiology.
- j) Name the fundamental tissues of the body.
- k) Structural and functional unit of kidney is _____.
- l) Name the bones of cranium.
- m) The fertilization in female takes place in
 - i) Uterus
 - ii) Vagina
 - iii) Fallopian tube
 - iv) Ovary
- n) Which of the following is property of skeletal muscle?
 - i) Muscle tone
 - ii) Muscle contraction
 - iii) Muscle fatigue
 - iv) All of the above
- o) Organ of corti helps in
 - i) Hearing
 - ii) Balancing
 - iii) Vision
 - iv) All of the above
- p) Exchange of gases at the cellular level in lungs and tissue is described as
 - i) Inspiration
 - ii) Internal respiration
 - iii) External respiration
 - iv) All of the above
- q) _____ is the inner most nervous coat of the eye.
- r) Which of following function belongs to bile juice?
 - i) Laxative action
 - ii) Fat digestion
 - iii) Buffer action
 - iv) All of the above
- s) The term 'Proximal' refers to
 - i) Towards the front of body
 - ii) Towards the back of body
 - iii) The upper part nearest to the point of attachment
 - iv) In the midline
- t) Write any two functions of 'CSF'.

23242

3 Hours / 80 Marks



20115

Seat No.

--	--	--	--	--	--	--	--

- Instructions* –
- (1) All Questions are Compulsory.
 - (2) Answer each next main Question on a new page.
 - (3) Illustrate your answers with neat sketches wherever necessary.
 - (4) Figures to the right indicate full marks.
 - (5) Assume suitable data, if necessary.
 - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any SIX of the following:

30

- a) Describe the stages of demographic cycle and state objectives of family planning.
- b) Define health. Enlist various determinants of health and explain any three with examples.
- c) i) Write causes and ill effects of water pollution.
ii) What is social impact of drug addiction?
- d) Write causative agents, clinical presentation, and role of pharmacists in educating the public in the following communicable disease. (any two)
 - i) Acute diarrhoeal diseases
 - ii) AIDS
 - iii) Dengue
- e) Enlist all ongoing National Health Programme in India and explain any one focussed on vector borne diseases.
- f) Define the following :
 - i) Microbiology
 - ii) Morbidity
 - iii) Quarantine
 - iv) Endemic
 - v) Pandemic
- g) Define epidemiology. Explain different types of epidemiological methods.

2. Attempt any TEN of the following:

30

- a) Write causes and prevention of food poisoning.
- b) State advantages and disadvantages of bottle feeding in infants.
- c) What is pharmacoconomics? Write its importance.
- d) Enlist various respiratory infections and write causative agent for any one respiratory infection.
- e) Write about
 - i) Artificial ripening
 - ii) Balanced diet
- f) Write the causative agent, mode of transmission and types of leprosy.
- g) Write note on sources, functions of proteins.
- h) Define social pharmacy. Give any two examples of FIP development goals.
- i) Write causative agent and mode of transmission of
 - i) Tetanus
 - ii) COVID-19
 - iii) Filariasis
- j) Discuss role of pharmacist in national health programmes.
- k) Name various methods of solid waste disposal. Explain any one.

P.T.O.



3. Attempt ALL of the following:

- a) Name the program launched by the Government of India to address the issue of prevalence of orodental disease.
- b) Match the followings :

Type of Bacteria		Shapes	
1.	Cocci	a.	Rod
2.	Bacilli	b.	Comma
3.	Vibrios	c.	Spiral
4.	Spirilla	d.	Spherical

- i) 1-d , 2-a , 3-b , 4-c ii) 1-d , 2-c , 3-b , 4-a
- iii) 1-c , 2-b , 3-a , 4-d iv) 1-a , 2-b , 3-c , 4-d
- c) HMO stands for _____.
- d) Name the disease characterized by the deficiency of iron.
- e) Name the protozoan that causes amebiasis.
- f) _____ is the immunity induced by vaccines which are the preparations of live or killed microorganisms or their products.
- i) Artificial active immunity ii) Natural active immunity
- iii) Natural passive immunity iv) Artificial passive immunity
- g) Name one national health programme focussed on nutrition.
- h) Define noise.
- i) BCG stands for _____.
- j) What is sewage?
- k) Write full form of NHP.
- l) Which one of the following diseases is transmitted easily through droplet infection?
- i) Plague ii) Tetanus
- iii) Syphilis iv) Chickenpox
- m) Vitamin A is also known as _____.
- n) Give example of health programme for maternal health.
- o) Name any two dimensions of health.
- p) Write a full form of SDG.
- q) Which of the following is not an example of a mechanical contraceptive?
- i) Condoms ii) Diaphragms
- iii) IUCD iv) Rhythm method
- r) WHO stands for _____.
- s) Name any one national health program for mental health.
- t) Tuberculosis is spread by _____.
- i) Droplets spread while coughing
- ii) Shaking someone's hand
- iii) Touching bed linens or toilet seats.
- iv) Sharing toothbrushes