0805

21819

3 Hours / 80 Marks 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) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. Attempt any EIGHT of the following: **16**

a) Give any four reasons for film coating.

b) Explain any four factors affecting size reduction.

c) Define drug and dosage forms.

d) Give the significance of drying.

e) Write the difference between hard and soft gelatin capsule.

f) Find out the proportion of procaine HCL which will yield solution iso-osmotic with blood plasma.

Given: F.P of 1% procaine HCL = –0.122°C.

g) Explain tyndallisation process.

h) List the steps involved in slugging method.

i) Write the advantages of water as solvent for extraction.

j) Write the precautions to be taken while placing the material in hot air oven.

Marks

2. Attempt any FOUR of the following: **12**

a) Define emulsion and list the different emulsifying agents.

b) Write the salient features of fourth edition of I.P.

c) Write any three ideal qualities of packing material and any three disadvantages of glass as a material for packing.

d) Explain the following evaluation test for tablets. (any one)

(i) Friability

(ii) Disintegration

e) Describe aerosol container with labeled diagram.

f) Explain construction and working of Cutter Mill or Hammer Mill.

3. Attempt any FOUR of the following: **12**

a) Explain the working of ball mill with a well labeled diagram and give any two advantages.

b) Explain construction and working of cyclone separator with a well labeled diagram.

c) Describe the stages of percolation.

d) Explain various grades of powders.

e) Write the applications of simple distillation in pharmacy.

f) State the following:

(i) Arista

(ii) Churna

(iii) Taila.

Marks

4. Attempt any FOUR of the following: **12**

a) Describe the factors which affect rate of the evaporation of liquid.

b) Describe construction of autoclave with diagram.

c) Explain working, construction of fitter leaf with neat diagram.

d) Describe working of FBD with well labeled diagram.

e) Explain the types of immunity.

f) Describe the process of manufacturing of hard gelatin capsules.

5. Attempt any FOUR of the following: **12**

a) Describe the method of preparation of BCG vaccine with dose, storage and uses.

b) Give the significance of sterilization using bactericidal solution, explain the method and name the bactericidal agents.

c) Describe the method of distillation for immiscible solutions.

d) Explain the construction and working of triple roller mill.

e) Write the stages involved in sterilization of surgical dressings.

f) How will you prepare 5 fl. 02 solutions and using that prepare a 5 litre 1 in 2000 solution?

6. Attempt any FOUR of the following: **16**

a) Explain any four manufacturing defects in tablet manufacturing.

b) What is aseptic technique? List the various sources of contamination and explain the sterility test.

c) Find the volume of 20%, 15%, 10% and 8% alcohol should be mixed to get 12% alcohol 300 ml.

d) Define mixing, explain the types and mechanism of mixing.

e) Discuss novel drug delivery systems.

f) Explain the method of hot percolation process with well labeled diagram and write its limitations.

0806

21819

3 Hours / 80 Marks Seat No. | | | | | | | | |

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(2) Answer each next main Question on a new page.

(3) Figures to the right indicate full marks.

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Marks

1. Attempt any FIVE of the following: **20**

a) Explain Arrhenius theory of acids and bases with example. Give its limitations.

b) Define antimicrobial agents. Explain mechanism of action of topical antimicrobials.

c) Draw a well labeled diagram of apparatus used for limit test for Arsenic. Name it.

d) Define antioxidants. Enlist the criteria for selection of antioxidant.

e) Define "Achlorhydria". Write a short mono-graph of drug used for it.

f) Enlist properties for an ideal antacids. Why antacids are preferred in combination?

g) Elaborate the role of iron and calcium in human physiology.

h) Explain physiological acid-base balance.

Marks

2. Attempt any THREE of the following: **12**

a) Discuss mechanism of action of antioxidants. Give properties and uses of hydrogen peroxide.

b) Write molecular formula and uses of ammonium chloride and sodium bicarbonate.

c) Define quality control and give its importance in pharmacy.

d) Write properties and uses of sodium thiosulphate and sodium nitrite.

e) Give uses, storage condition and labeling of carbon dioxide gas.

3. Attempt any THREE of the following: **12**

a) Enlist different "sources of impurities".

b) Elaborate ORS mixture. Give its composition according to WHO.

c) Write a note on cyanide poisoning.

d) Explain metabolic acidosis and alkalosis. Name one compound used in metabolic acidosis and metabolic alkalosis

e) Give medicinal uses of:

(i) Zinc oxide

(ii) Titanium dioxide

(iii) Talc

(iv) Kaoline

Marks

4. Attempt any THREE of the following: **12**

a) Write formula and uses of ferrous sulphate and calcium gluconate.

b) Explain radio-opaque contrast media. Give properties and uses of any one compound used for it.

c) Define the terms:

(i) Desensitizers

(ii) Emetics

(iii) Expectorant

(iv) Laxatives

d) Explain the principle involved in limit test for iron with reactions.

e) Define respiratory stimulants. Give properties and uses of ammonium carbonate.

5. Attempt any THREE of the following: **12**

a) What are inhalants? Give properties and uses of nitrous oxide.

b) Define antidote and classify it.

c) Enlist various intra and extra cellular electrolytes. Give properties and uses of sodium chloride.

d) Explain anti carries agent giving example

e) Define and classify gastro intestinal agents with example.

Marks

6. Attempt any THREE of the following: **12**

a) Give biological role of oxygen. Give properties and uses of oxygen.

b) Define Radiopharmaceuticals. Enlist its various applications.

c) Write two identification tests for:

(i) Calcium

(ii) Chlorides

d) Explain with examples:

(i) Heamatinic

(ii) Systemic alkaliser

e) Define topical agents. Discuss the uses of astringents with examples.

0807

21819

3 Hours / 80 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

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Marks

1. Attempt any EIGHT of the following: **16**

a) Define Pharmacognosy. Name the scientist who coined the term Pharmacognosy.

b) Write name of drug of the following synonyms:

(i) Crow fig

(ii) Ma-Huang

(iii) Periwinkle

(iv) Banda soap

c) Define with examples:

(i) Cardiotonics

(ii) Antiseptic.

d) Which part of plant is used as drug in case of:

(i) Rauwolfia

(ii) Arjuna.

(iii) Rhubarb

(iv) turmeric

Marks

e) Write any four characteristics of Umbelliferous fruits.

f) Draw well labelled diagram of macroscopy of Ginger rhizome.

g) Name two drugs belonging of following family:

(i) Apocynaceae.

(ii) Liliaceae.

h) Write significance of:

(i) Swelling index.

(ii) Ash value.

i) Name the drug which contain following active chemical constituents:

(i) Shogaol.

(ii) Harman.

(iii) Ajmalicine.

(iv) Rhein

j) Write method of preparation of cotton fibers.

k) Write contribution of following scientist in the development of pharmacognosy:

(i) Dioscoridis

(ii) Galen.

l) Differentiate between leaf and leaflet.

2. Attempt any FOUR of the following: **12**

a) Define resins. Write resin combinations.

b) Explain different methods of adultration with examples.

c) Define oxytocics. Explain life cycle of ergot.

d) Write morphological method of classification of crude drug along with merits and demerits.

e) Define alkaloids with examples. Write identification test for alkaloids.

f) Write biological source, chemical constituents and uses of Cinchona.

Marks

3. Attempt any FOUR of the following: **12**

a) Write microscopical method of evaluation of crude drug.

b) Draw well labelled diagram of T.S of fennel or Nux vomica and explain it.

c) Write about.

(i) Vitali – Morein test

(ii) Modified borntrager test

(iii) Killer – killani test

d) Write diagnostic characteristics of leaf (leaf constant).

e) Write chemical constituents of

(i) Ephedra

(ii) Digitalis

(iii) Sandalwood.

f) Write biological source, chemical constituents and uses of vasaka.

4. Attempt any FOUR of the following: **12**

a) Define pharmaceutical aids. Classify pharmaceutical aids with examples.

b) Differentiate between organized crude drug and unorganized crude drug with examples.

c) Define Tannin. Write types and pharmaceutical applications of tannin.

d) Write biological source, chemical constituents and uses of Rauwolfia.

e) Define with examples:

(i) Diuretics

(ii) Antitussive

(iii) Antidysentric

f) Write uses of the following:

(i) Dioscorea.

(ii) Pyrethrum

(iii) Shatavari

Marks

5. Attempt any FOUR of the following: **12**

a) Write cultivation, collection and preparation of Senna for the market.

b) Define and classify fibres. Write ideal requirements of surgical dressings.

c) Write biological source, chemical constituents and uses of Madhunashini or Shankhapushpi.

d) Define Antitumor. Write chemical constituents and uses of vinca.

e) Define volatile oil. Write Isolation methods of volatile oil.

f) Enlist Indigenous system of medicine. Write about Ayurvedic system of medicine.

6. Write chemical tests of the following crude drugs (any FOUR): **16**

a) Acacia.

b) Pale Catechu

c) Turmeric

d) Agar

e) Asafoetida

f) Senna

0808

21819

3 Hours / 80 Marks Seat No. | | | | | | | | |

Instructions – (1) All Questions are *Compulsory.*

(2) Answer each next main Question on a new page.

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Marks

1. Attempt any FIVE of the following: **20**

a) Define the terms:

(i) Marker enzymes

(ii) Isoenzymes

(iii) Metal contactor

(iv) Zwitterion

b) Name four important organelles of animal cell and write one function of each.

c) Write short note on:

(i) Essential fatty acids.

(ii) Nutritional edema

d) Define and classify lipids.

e) Explain the terms and treatment of:

(i) Hyponatremia

(ii) Hypothyroidism

P.T.O.

Marks

f) Write short note on:

(i) Oxidative phosphorylation

(ii) Transamination

g) Explain the terms:

(i) Purpura

(ii) Polycythemia.

2. Attempt any THREE of the following: **12**

a) Define the terms:

(i) Biochemistry

(ii) Pathology

(iii) Catabolism

(iv) Anabolism

b) Write a note on:

(i) Acrolein formation

(ii) Denaturation of proteins

c) What is vitamin C? Explain its biochemical role. Mention deficiency condition and its symptoms.

d) Explain the identification test for:

(i) Carbohydrates

(ii) Proteins

e) Define unit of enzyme activity. Mention four important factors that affect enzyme activity. Explain effect of temperature.

Marks

3. Attempt any THREE of the following: **12**

a) Write structure of:

(i) Nicotinamide

(ii) Alanine

(iii) D-fructose

(iv) Lactose

b) Define proteins. Explain the role of proteins in human body.

c) Explain oxidation of glucose with different oxidizing agents with reactions.

d) Explain biochemical role of potassium and chlorine in our body.

e) What are oils? Explain the role of antioxidant in preservation of oil.

4. Attempt any THREE of the following: **12**

a) Define the term 'Enzyme'. Explain binding of substrate with an enzyme at the active site.

b) Explain secondary structure of proteins.

c) What is pathological urine? Mention abnormal constituents of urine and their significance.

d) Explain the importance of water in our body. Mention the routes of excretion of water from the body.

e) What are coenzymes? Give full names of six vitamins and their respective coenzymes.

Marks

5. Attempt any THREE of the following: **12**

a) Discuss in brief the reactions involved in β-oxidation of fatty acids.

b) Explain in short:

(i) Acid value

(ii) Acetyl number

(iii) Phospholipids

(iv) Iodine number.

c) Explain biochemical role of calcium. Mention its deficiency manifestations and remedy.

d) Write short note on:

(i) Arteriosclerosis

(ii) Hyperammonemia

e) What is enzyme inhibition? Explain competitive inhibition with one example.

6. Attempt any TWO of the following: **12**

a) Explain glycolysis cycle.

b) Explain:

(i) Phenylketonuria

(ii) Ketosis

c) Give schematic representation of classification of carbohydrates. Explain each class with examples.

0809

21819

3 Hours / 80 Marks Seat No. | | | | | | | | |

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Marks

1. Attempt any EIGHT of the following: **16**

a) Define tissue. Name fundamental tissues of the body.

b) State the functions of plasma proteins.

c) Give the functions of skeleton.

d) Name the arteries supplying blood to liver, intestine diaphragm and kidneys.

e) Draw a neat labeled diagram of L.S of Kidney.

f) Compare the anatomy of sympathetic nervous system with that of parasympathetic nervous system.

g) Give functions of Bile.

h) Why pituitary gland is known as master gland.

i) Name different organs of respiratory system.

j) Describe Neuro-muscular junction in short.

k) Explain how skin helps in maintaining body temperature.

l) Define: Anatomy and Physiology.

Marks

2. Attempt any FOUR of the following: **12**

a) Discuss physiology of menstrual cycle.

b) Define endocrine gland. Enlist endocrine glands of human body.

c) Describe composition and functions of Gastric juice.

d) What is Hypothalamus? Give its functions.

e) Discuss the physiology of muscular contraction.

f) Explain the process of urine formation.

3. Attempt any FOUR of the following: **12**

a) Describe physiology of respiration.

b) Describe in brief the cardiac cycle.

c) What are lymph nodes. Give their functions.

d) Discuss in brief the process of coagulation of blood.

e) Name any six cranial nerves with their functions.

f) Give composition and function of saliva.

4. Attempt any FOUR of the following: **12**

a) Describe the structure and function of mitochondria.

b) Write functions and classification of WBC's.

c) Classify joints with examples of each class.

d) Describe the terms Angina Pectoris and Stenosis.

e) Discuss different functions of kidneys.

f) Give the microscopic structure of skeletal muscles.

Marks

5. Attempt any FOUR of the following: **12**

a) Name different organs of male reproductive system with their functions.

b) What is Reflex action? Draw a neat labeled structure of Reflex arc.

c) Explain the terms-vital capacity, tidal volume and residual volume.

d) Describe digestion of carbohydrates.

e) Explain the terms universal donor and universal recipient.

f) Describe different layers of stomach.

6. Attempt any FOUR of the following: **16**

a) Describe microscopic structure of the bone.

b) Explain role of haemoglobin in the process of respiration.

c) Name the abnormal constituent of urines with name of disease they signify.

d) Discuss choroid, ciliary body and iris of eye.

e) Discuss structural and functional differences between artery and vein.

f) Explain in short, factors affecting on Heart rate.

00810

21819

3 Hours / 80 Marks Seat No. | | | | | | | | |

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Marks

1. Solve any EIGHT of the following : **16**

(a) Define the terms :

(i) Physical health

(ii) Mental health

(b) Name the disease caused by : (any two)

(i) *Salmonella typhi*

(ii) *Wuchereria bancrofti*

(iii) Lyssa virus type-I

(c) Write object of first aid.

(d) Give the long forms of the following abbreviation :

(i) HIV

(ii) CHD

(iii) STD

(iv) UTI

(e) Write the role of 'Pharmacist in promoting family planning" ?

(f) Define Kwashiorkor disease. Give its symptoms.

(g) Define Zoonotic disease. Classify them.

(h) Name the disease caused due to deficiency of :

(i) Vitamin A

(ii) Vitamin B

(iii) Vitamin C

(iv) Vitamin B_{12}

(i) What is composition of Oral Rehydration Salt (ORS) ?

(j) Draw a well labelled diagram of Bacterial Cell.

(k) Write immunization schedule for children.

(l) Differentiate between communicable & non-communicable diseases.

2. Solve any FOUR of the following : **12**

(a) Discuss methods of solid-waste disposal.

(b) Write sources, functions & deficiency diseases of Vitamin A.

(c) Define demography. Explain stages of demographic cycle.

(d) Write symptoms & first aid treatment for shock.

(e) Enlist various determinants of health & discuss any one.

(f) Write importance & procedure of 'Gram staining'.

3. Solve any FOUR of the following : **12**

(a) Discuss in detail Noise Pollution.

(b) Define blindness. Write causes, prevention & control of blindess.

(c) Write sources of air pollution. Write its effect on health.

(d) Write about hormonal contraceptives.

(e) Define medical entomology. Discuss in detail about insect control.

(f) Write about types, prevention & control of diabetes mellitus.

4. Solve any FOUR of the following : **12**

(a) Define the term fertility. Explain various factors affecting fertility.

(b) Classify food. Write functions of carbohydrates & proteins.

(c) Define the term 'Immunization'. Write the immunization schedule.

(d) Classify contraceptive methods with examples.

(e) Discuss Cardi-pulmonary Resuscitation (CPR).

(f) Define Immunity. Classify it.

5. Solve any FOUR of the following : **12**

(a) Describe various methods of small scale purification of water.

(b) Write disinfection procedure for

(i) Room

(ii) Sputum

(c) Write functions & deficiency diseases of :

(i) Calcium

(ii) Iron

(d) What are hospital acquired infections ? Write prevention & control of "Noscomial infecton".

(e) Name type of fracture & first aid treatment for fracture.

(f) Give advantages & disadvantages of condoms.

P.T.O.

6. Write causative agent, mode of transmission, symptoms & control of any **FOUR** of the following : **16**

(a) Tuberculosis

(b) AIDS

(c) Cholera

(d) Leprosy

(e) Plague

(f) Trachoma
