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PH-I/6

June 2016

HUMAN ANATOMY & PHYSIOLOGY

Time Allowed: 3 Hours *Full Marks: 80*

Question No.1 is compulsory and any four from the rest.

1. A. Answer the following (any eight): 1½x8=12

i) What are the elementary tissues of the human body?
ii) What is synapse?
iii) What is the common site of fertilization?
iv) What is blood brain barrier?
v) What is dwarfism?
vi) What is erythropoesis?
vii) What is first heart sound?
viii) What is lamella?
ix) What is Einthoven's triangle?
x) What is rigor mortis?
xi) What are pleura?
xii) What is EEG?

B. Differentiate between (any two): 2x2=4

i) Male pelvis and Female pelvis
ii) Hyperthyroidism and hypothyroidism
iii) Megaloblastic anaemia and sickle cell anaemia

2. Write short notes on the following with neat sketch: 4x4
(a) WBC, (b) Mitochondria, (c) Bones of the hand, (d) Endoplasmic reticulum.

3. Discuss the general characteristics, classification ad function of epithelial tissues. Write down the mechanism of blood clotting. 10+6

4. Describe anatomical position and structure of the Heart. What is cardiac cycle? Discuss the various events of cardiac Cycle. 10+2+4

5. Describe the structure and function of ear with the help of basic physiology involved. 16

6. Explain the followings (any eight): 8x2
(a) Vital capacity, (b) Residual volume, (c) Dyspnea, (d) Hypoxia, (e) Glaucoma, (f) Myopia, (g) Hypermetropia, (h) Reflex action, (i) Taste buds.

7. Describe the anatomical position, structure and function of Liver. 16

8. Draw a labeled diagram of Kidney. How urine is formed? Mention the composition of urine. 9+3+4

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Calcutta Institute of Pharmacy & Allied Health Sciences

June 2016

HEALTH EDUCATION AND COMMUNITY PHARMACY

Time Allowed: 3 Hours *Full Marks: 80*

Question No.1 is compulsory and answer <u>any four</u> from the rest.

1. Answers the questions (any eight): 8x2
   - i) How do you define normal health?
   - ii) Who initiated the idea of social medicine and when real practical beginning of social medicine made?
   - iii) What is mortality?
   - iv) What are the various impurities of air?
   - v) What are the main sources of air pollution?
   - vi) What are the criteria for safe and portable water?
   - vii) Name the water born diseases.
   - viii) What are the basic purposes of food intake and what are the main components of food?
   - ix) Name the essential fatty acids and essential amino acids.
   - x) What are vitamins?

2. Write short notes on (any two) – (i) Demography, (ii) First–aid, (iii) Sexually transmitted diseases, (iv) Epidemiology. 8x2

3. i) Name the fourteen trace elements in human nutrition as recognized by WHO.
   ii) What is the main step taken by authorities to prevent Goiter in the endemic area?
   iii) What are the effects of vitamin A deficiency?
   iv) What is the daily requirement vitamin A?
   v) What are the sources of vitamin K? Mention it's importance. 4+2+4+2+4

4. i) What do you understand by balance diet?
   ii) Mention some common faults in the Indian diet?
   iii) How is nutritional status of an individual determined?
   iv) Enumerate some of the causes of the poor nutritional status. 4+4+4+4

5. i) Describe with a sketch the cellular structure of a bacterium.
   ii) How water can be purified by small scale method. Write in short. 8+8

6. Differentiate the following – (i) Mortality and morbidity, (ii) Pandemic and epidemic, (iii) Active immunity and passive immunity, (iv) Toxin and toxoid.

7. Write the causative agent, mode of transmission and prevention of the following (any four) – (i) Tetanus, (ii) Leprosy, (iii) Maleria, (iv) Plague, (v) Cholera, (vi) Chicken pox. 4x4

8. Define family planning. Write down the objectives of family planning. Classify the method of contraception. Mention the advantages of physical method over chemical method. 2+5+3+6

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PH–I/3

June 2016

PHARMACOGNOSY

Time Allowed: 3 Hours *Full Marks: 80*

Question No.1 is compulsory and answer any four from the rest.

1. A. Fill-up the blanks with appropriate word(s) [any ten]: 1×10

a) A sesquiterpenes contains _____ nos. of isoprene unit.
b) Colchicum is used for the treatment of _____.
c) Vincristine is one of the active constituents of the plant_____.
d) _____ leaf can paralyse the taste gland for bitter taste for few hours.
e) The synonym of Gokhru is _____.
f) Basmamic acids contain two acids _____ and _____.
g) Quill describes the _____of bark.
h) _____ is used in the preparation of mosquito repellent formulations.
i) _____is an example of animal fibre.
j) A carcinogenic substance produced by the fungal growth in raw arachis oil is known as_____ .
k) Mayer's reagent is used for the identification of _____.
l) Stomatal index can be calculated by the formula _____.

B. Whether the following statements are 'True' of 'False' (any six). 1×6

a) Chaulmoogra oil is used in the treatment of diabetes
b) Senna belongs to leguminosae family
c) Fennel is obtained from the dried ripe fruits of the plant known as *Foeniculum vulgare* belonging to the family Umbelliferae
d) Cephaelin is one of the constituents of ipecacuanha
e) Disinfectants can be applied to skin after wounds or cuts
f) Cotton contains cellulose
g) Cannabis is a narcotic substance

2. Write notes on (any four): 4×4
(a) Surgical Dressings (b) Pharmaceutical Aids (c) Organoleptic Evaluation (d) Oleo resin and balsamic resin (e) Natural Pesticides

3. What are glycosides? Classify glycosides with example. Write down the identification tests of glycosides. What is Enfleurage? 2+6+6+2

4. Define the following terms with example of a drug and mention their biological source: 8×2
(i) Laxatives, (ii) Cardiotonics, (iii) Astringents, (iv) Carminatives, (v) Oxytocics, (vi) Vitamins, (vii) Antihypertensives, (viii) Antimalarials

5. Mention the biological source and active constituents of the following crude drugs: 8×2
(i) Digitalis, (ii) Senna, (iii) Coriander, (iv) Ashwagandha, (v) Chaulmoogra Oil, (vi) Gymnema, (vii) Liquorice, (viii) Neem

6. Describe with neat diagram the gross anatomical studies of Clove and Cinnamon. 8+8

7. Differentiate between (any four): 4×4
(i) Organised crude drug and unorganised crude drug, (ii) Leaf and leaflet, (iii) Fixed Oil and volatile oil, (iv) Perfumes and Flavours, (v) Plant fibre and animal fibre

8. What is adulteration? What are the different means of adulteration of crude drugs? Write down the microscopic evaluation of crude drug. 2+6+8

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PH-I/2

June 2016

PHARMACEUTICAL CHEMISTRY – I

Time Allowed: 3 Hours *Full Marks: 80*

Question No.1 is compulsory and any four from the rest.

1. A. Write whether the following statements are true or false (any ten): 1x10

i) Blue vitriol is the other name of ferrous sulphate
ii) The term "cold" means any temperature between 8° to 25° C
iii) Aluminium hydroxide causes constipation.
iv) Mercuric oxide has two different colour
v) Dakin's Solution is another name of chlorinated lime.
vi) Borax contains 8 molecules of water of crystallization.
vii) Hypo is the synonym of sodium metabisulphate.
viii) Nitrous oxide is known as laughing gas.
ix) Glyceroboric acid is weak than Boric acid.
x) Aqua regia is a mixture of nitric acid and hydrochloric acid.
xi) Zinc is used in the limit test of arsenic as reducing agent.
xii) Ammonia possesses saponifying properties.
xiii) Boric acid is unstable in air

B. What happens when (any three): 3x2

i) Zinc sulphate solution is treated with Sodium carbonate
ii) Potassium permanganate is heated up to 240 ° C
iii) Chlorinated lime is dissolved in water.
iv) Boric acid is heated to 100 ° C
v) Ammonia passes over hot copper oxide.

2. Write short notes on (any four): 4x4

(a.B.a) Solubility as per IP 1985
(a.B.b) Source of Impurities in pharmaceuticals
(a.B.c) Buffer capacity
(a.B.d) Radioactive substances
(a.B.e) Cyanide poisoning

3. Explain the following statements: (any eight): 2x8

(a) The solution is made alkaline with ammonia in the limit test of Iron.
(b) Stannated hydrochloric acid in the limit test of Arsenic
(c) Citric acid is used in the limit test of Iron.
(d) Burnt sugar solution is added in the limit test lead.
(e) Glucose is added in oral rehydration therapy.
(f) Methyl orange is a suitable indicator in the titration of sodium carbonate.
(g) Barium sulphate reagent is used in the limit test of sulphates.
(h) Sulphuric acid is amphoteric substance.
(i) Silver nitrate solution in the limit test of Chloride.
(j) Sulphuric acid is added to the solution of ferrous sulphate during its assay.
(k) All Bronsted acids are Lewis acids but all Lewis acids are not Bronsted acids

4. Discuss the role of antioxidants in pharmaceutical products. Mention the mechanism of action of inorganic antioxidants. Explain the criteria for selection of antioxidants. Write the preparation, properties and uses of Sodium metabisulphate. 3+4+3+6

5. Explain the term cathartic, laxative and purgative. Define antacid. State the requirements of ideal antacids. What is meant by Systemic antacid? What are topical agents? Discuss the composition and properties of calamine. 4+2+3+2+5

6. What do you mean by intracellular and extra cellular fluid? Write the name the major extra-cellular and intra-cellular ions. Name the important inorganic ions associated with body metabolism. What are the causes of electrolyte imbalance? What is replacement therapy? Explain sodium lactate injection is preferred over sodium carbonate injection. 3+4+2+2+2+3

7. What are the pharmaceutical uses of the following compounds (any eight): 8x2
Sodium thiosulphate; Magnesium sulphate; Ammoniated mercury; Ammonium carbonate; Antimony potassium tartarate; Sodium lactate; Dicalcium phosphate; Aluminium sub acetate solution; Magnesium trisillicate; Selenium sulphide; Povidone iodine.

8. Mention the storage conditions of the following compounds (any eight): 8x2
Calcium hydroxide; Sodium metabisulphite; Silver nitrate; Chlorinated lime; Sodium iodide (131I) solution; Ammonium chloride; Potassium permanganate; Hydrogen peroxide; Magnesium trisillicate; Ammonium carbonate ; Antimony potassium tartarate;

June 2016

PH–I/1

PHARMACEUTICS – I

Calcutta Institute of Pharmaceutical Technology & AHS
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Time Allowed: 3 Hours

Full Marks: 80

Answer any five questions of the following.

1. Complete the following sentences: 1x16

   i) Fluid preparation used for external application without friction is called _____.

   ii) Hermetically sealed container is impervious to _____.

   iii) 1st Edition of I.P. was published in the year _____.

   iv) Angle of repose is related to _____.

   v) Aerosol packing is used for delivering drug in form of _____.

   vi) Implants are also called _____ tablet.

   vii) Sieve is used for _____.

   viii) In simple syrup percentage of sucrose _____.

   ix) _____ are aqueous solution with pleasant taste to clean and deodorize buccal cavity.

   x) Alcohol concentration of Elixir is _____.

   xi) Medical dusting powders are used mainly _____ _____.

   xii) In Mandl's paint glycerin is used to make the preparation _____.

   xiii) Creams are two types _____ & _____ cream.

   xiv) The compounds which undergo biotransformation before showing desired pharmacological activity are called _____.

   xv) There are two systems present in Metrology of weights & measures _____ and _____ system.

   xvi) _____ glasses are used for the preparation of transfusion bottles and ampoules.

2. Define the term Sterilization? Discuss your idea about Moist heat sterilization. Mention holding temperature, minimum holding time and corresponding pressure of steam which are normally employed for sterilizing by heating in an autoclave. How will you sterilize surgical dressing & Transfusion fluid, write in short mentioning required temperature, pressure and time? 2+3+5+6

3. Define the term size reduction. Mention the factors which affect size reduction. Write the use and advantage of fluid energy mill. 2+8+6

4. Write notes on (any two) – (a) your conception about Ayurvedic dosage form, (b) Freeze drying process, (c) Steam distillation, (d) Water for injection & its preparation process. 2x8

5. Define the following terms (any eight) – (a) vaccine, (b) Sera, (c) Toxin, (d) Aseptic technique, (e) filtration, (f) Levigation. (g) Arkas, (h) Aerosol, (i) Amber colour glass. 8x2

6. Answer *any four* questions: 4x4

i) a) What will be the dose for a child of 5 years if the adult dose of a drug is 400 mg?
b) Prepare 200 ml of 5% solution of chloroform in Alcohol (90%).

ii) What is Percolation? Write the steps involved in this process. Give one example of tincture made by this process.

iii) Define Mixing. Mention the name of equipment used for mixing semisolid. Give specific use of Triple Roller Mill.

iv) Define Tablet. What do you mean by Disintegration test. What should be the disintegration time for an uncoated tablet?

v) Write notes on Sterilization by radiation.

7. i) Write a brief notes on New Drug Delivery System.
ii) Compare the merits and demerits of glass and plastic as container.
iii) What is Indian Pharmacopoeia? 5+6+5

8. i) a) Which coating materials are used in enteric coating tablet.
b) Why soda lime glass is not used for packaging of parenterals?
c) What do you mean by Large volume Intravenous fluid?
d) What is Galenical?
e) Write the different sizes of capsules. 2x5

ii) a) Write notes on evaluation of Tablet.
b) Differentiate between Hard & Soft capsules. 3x