

[Time: Three Hours]

[ Marks:100]

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory.
  2. Figures to the right indicate full marks.
  3. Draw neat and labelled diagrams wherever necessary.
  4. Answer the questions in proper order.

**Q. 1 Answer the following (Any Two):** (20)

- (a) Explain the types of plasma proteins and their functions.
- (b) What is anemia? Give an account of the different types of anemia.
- (c) Describe the mechanism of clotting of blood.

**Q. 2 Answer the following (Any Two):** (20)

- (a) Describe in detail the microscopic examination of blood for the diagnosis of malaria.
- (b) Explain the blood tests performed to detect impairment of renal function.
- (c) What are coagulopathies? Discuss the common coagulopathies and their lab diagnosis.

**Q. 3 Answer the following (Any Two):** (20)

- (a) Explain the different types of acquired immunity.
- (b) Give an account of the different types of T cells and their functions.
- (c) Describe the processing and presentation of exogenous and endogenous antigens.

**Q. 4 Answer the following (Any Two):** (20)

- (a) Give an account of agglutination as an antigen-antibody interaction. Add a note on haemagglutination tests.
- (b) Describe the different types of sub-unit vaccines.
- (c) Explain the immunological basis of graft rejection.

**Q. 5 Write short notes on (Any Four):** (20)

- (a) Degradation of hemoglobin.
- (b) Thyroid function tests.
- (c) Ig M.
- (d) Dendritic cells.
- (e) Types of grafts.
- (f) Thrombopoiesis.

[Time: 2:30 Hours]

[ Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. All questions are compulsory and carry equal marks.
  2. Figures to the right indicate full marks.
  3. Draw neat labelled diagrams wherever necessary.

Q.1 Explain the following.

- a) Types of Leukemia. (07)

**OR**

- a) Formation of blood platelets. (07)

- b) Structure and functions of RBCs. (08)

**OR**

- b) Mechanism of clotting of blood. (08)

Q.2 Describe the following.

- a) Blood transfusion. (07)

**OR**

- a) Microbiological hematology. (07)

- b) Microscopic examination of blood for malaria. (08)

**OR**

- b) Carbohydrate Metabolism Tests. (08)

Q.3 Give an account of.

- a) Physical barriers of innate immunity. (07)

**OR**

- a) Structure and functions of IgG. (07)

- b) Lymph node as a secondary lymphoid organ. (08)

**OR**

- b) Types of acquired immunity. (08)

Q.4 Describe the following.

- a) Mechanism of agglutination reaction. (07)

**OR**

- a) ELISA. (07)

- b) Types of graft. (08)

**OR**

- b) Principles of vaccines. (08)

Q.5 Write notes on:

- a) Clotting time. (04)

**OR**

- a) Haemorrhage. (04)

- b) Sickle cell anemia and its diagnosis. (04)

**OR**

- b) Oncological hematology. (04)

- c) T lymphocytes. (04)

**OR**

- c) Rheumatoid arthritis. (04)

- d) Typhoid vaccines. (03)

**OR**

- d) Tumor antigens. (03)

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Duration : 2 & ½ hours

Maximum Marks : 75

- Note before:** 1] All questions are compulsory  
 2] Draw neat labelled diagrams wherever necessary  
 3] Figures to the right indicate full marks  
 4] Attempt the questions in their order given

**Q. 1 Explain the following...**

- a) Scales in fish. 07  
 OR  
 a) Basic structure of epidermis. 07  
 b) Mucous and serous types of glands. 08  
 OR  
 b) Spur in male birds. 08

**Q. 2 Describe the following...**

- a) Mode of action of hormones. 07  
 OR  
 a) Histology of pituitary gland. 07  
 b) Properties of hormones. 08  
 OR  
 b) Histology of ovary. 08

**Q. 3 Explain the following...**

- a) General skeleton of ribs. 07  
 OR  
 a) Sexual dimorphism of human skeleton – Sternum. 07  
 b) Structure of cervical vertebra. 08  
 OR  
 b) Structure of pectoral girdle. 08

**Q. 4 Describe the following...**

a) Principles of experimental embryology.

07

**OR**

a) Oncogenes.

07

b) 72 hours chick embryo.

08

**OR**

b) Germplasm theory.

08

**Q. 5 Write short notes on....**

a) Epidermal derivative – teeth.

04

**OR**

a) Whale bone.

04

b) Disorders of thyroid gland.

04

**OR**

b) Classification of hormones

04

c) Physical properties of bone

04

**OR**

c) Hind limbs

04

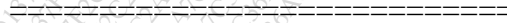
d) 24 hours chick embryo

03

**OR**

d) Signaling pathways – Induction

03



Duration 3 Hours

Marks :- 100

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1. All questions are compulsory.
  2. Figures to the right indicate marks.
  3. Draw neat labelled diagram wherever necessary.
  4. Answer the questions in order.

- Q. 1** Attempt **any two**: (20)
- a) Give a detailed account of symmetry. (10)
  - b) Explain the difference between unicellularity, colonisation and multicellularity. (10)
  - c) Describe in detail the six kingdom classification. (10)
- Q. 2** Attempt **any two**: (20)
- a) Describe in detail general characters of phylum Cnidaria. Add a note on class Hydrozoa. (10)
  - b) Explain the life history of *Fasciola hepatica*. (10)
  - c) Describe in detail the different classes of Porifera with example from each class. (10)
- Q. 3** Attempt **any two**: (20)
- a) Explain in detail the characteristics of subphylum Crustacea and add a note on class Malacostraca. (10)
  - b) Describe the example from each of the five classes of phylum Echinodermata. (10)
  - c) Give an account of distinguishing features and examples of class Scaphopoda and class Cephalopoda. (10)
- Q. 4** Attempt **any two**: (20)
- a) Describe the external characters of *Sepia* with neat labelled diagram. (10)
  - b) Describe the circulatory system of *Sepia*. (10)
  - c) Give an account of male and female reproductive systems of *Sepia*. Add a note on copulation and fertilization. (10)
- Q. 5** Attempt **any two**: (20)
- a) Explain the types of true metamerism. (05)
  - b) Describe class Polychaeta. (05)
  - c) Explain characteristic features of class Insecta with example. (05)
  - d) Describe *Ascaris*.
  - e) Describe phylum Chaetognatha with example. (05)
  - f) Explain the structure of eye of *Sepia*. (05)

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