

DEPARTMENT OF ZOOLOGY
NAMBOL L. SANOI COLLEGE, NAMBOL

QUESTION BANK FOR ZOOLOGY (HONOURS)

PREVIOUS YEARS

SEMESTER – VI
PAPER-VI / ZOO 609

UNIT 1. Gametogenesis, Fertilization & Parthenogenesis

MCQ (1 mark)

- a) The first maturation division of the primary oocyte takes place 2018
i) In the ovary
ii) Just after ovulation
iii) In the oviduct
iv) After oviposition

Very short answers carrying 1 mark

- (a) What is the main function of acrosome of sperm? 2016
(b) Mention one important function of sertoli cells of testis in mammals. 2019
(c) Mention one important function of sertoli cell of testis in mammals. 2019

Short Answer carrying 3 marks

- a) Write a short note on natural parthenogenesis. 2016
b) Differentiate oogenesis and spermatogenesis giving three points only. 2018
c) Explain the significance of fertilization by giving three points. 2019
d) Define parthenogenesis. Give one example? 2020

Long Answer type Questions

- (a) Discuss with illustrated diagrams, the major events that occur in the process of fertilization. (12 marks) 2016
(b) Describe the process of oogenesis with necessary diagrams. Write two points of difference between oogenesis and spermatogenesis. (12 marks) 2016

- (c) Discuss the major events that occur in the process of fertilization. Support your answer with suitable diagrams. Write two points on the importance of fertilization. (12 marks) 2018
- (d) Describe the process of oogenesis with illustrated diagrams. Write two points on the significance of parthenogenesis. (12 marks) 2019
- (e) Define fertilization. Write the events of fertilization with necessary diagram? (12 marks) 2020

UNIT 2. Animal egg, early stages of development, foetal membranes

MCQ

- a) In the hen's egg, the nucleus of Pander lies just below 2016
 i) albumen
 ii) vitelline membrane
 iii) blastodisc
 iv) white yolk
- b) During the development of animals, the middle thick part of the myocoel called myotome forms 2016
 (i) dermis of skin
 (ii) body muscle
 (iii) vertebral skeleton
 (iv) perivisceral coelom
- c) The nitrogenous and metabolic wastes are stored in 2016
 (i) amniotic bag
 (ii) allantois
 (iii) yolk sac
 (iv) exocoel
- d) The nitrogenous and metabolic wastes of the foetus are stored in the 2018
 i) Amniotic bag
 ii) Allantois
 iii) Yolk sac
 iv) Coelom
- e) The number of extra-embryonic membrane in higher vertebrates are 2020
 i) 3
 ii) 4
 iii) 5
 iv) all of them

- f) The Hensen's node is formed by the cells of presumptive 2019
- i) Lung
 - ii) Heart
 - iii) Notochord
 - iv) kidney

Very short answers carrying 1 mark

- a) Which type of egg leads to meroblastic cleavage? 2016
- b) Mention one important physiological function of placenta. 2018
- c) Name one example of foetal membrane? 2020

Short Answer carrying 3 marks

- a) Enumerate three advantages of vital staining during construction of fat maps. 2016
- b) Draw and label the complete gastrula (yolk-plug stage) of frog. 2016
- c) Draw and label a neat diagram of chick embryo with four pairs of somites, Hensen's node, primitive streak and head fold. 2018
- d) Differentiate between area opaca and area pellucida giving three points. 2019
- e) Eggs of bony fishes are known as mesolecithal eggs. Why? 2020
- f) Draw and label of chick embryo showing with 4 pairs of somites? 2020
- g) Define placentitis. What type of placenta is present in human being? 2020
- h) Write a note on presumptive area giving three points only. 2018

Long Answer type Question

- a) What is placenta? Describe the different types of placenta in mammals. Write two functions of placenta. (12 marks) 2016
- b) Explain the process of gastrulation in frog with the help of necessary diagrams. (12 marks) 2018
- c) Trace the development of extra embryonic membranes in the chick. Support your answer with a neat labelled diagram. Mention their functions. (12 marks) 2019

UNIT 3. Organogenesis, Tissue interactions & Metamorphosis

MCQ

- a) Archinephros type of kidney is found in 2016
(i) amphibians
(ii) larval cyclostomes
(iii) reptiles
(iv) birds
- b) The insect hormone ecdysone was first isolated from silkworm by 2018
i) Wigglesworth
ii) Carroll Williams
iii) Karlson and Butenandt
iv) Imms
- c) The pheromones are released into 2019
i) Target tissue
ii) Haemolymph
iii) Coelom
iv) External environment
- d) A group of cells of common origin having the same specialised structure which fits them to perform a common function may be called 2020
i) Tissue
ii) gland
iii) organ
iv) none of the above
- e) Lamellae are absent in 2020
i) cartilage
ii) bone
iii) osteocytes
iv) all the above
- f) Which part of the body shows flexible movement due to the presence of cartilage? 2020
i) ear
ii) legs
iii) neck
iv) none of the above
- g) Gundersch (1912) experimented the role of thyroid hormone to metamorphosis
Of 2020
i) Tadpoles
ii) Fish
iii) Larvae
iv) Rana

Very short answers carrying 1 mark

- a) Give one significant point of difference. between retrogressive and progressive metamorphoses. 2016
- b) Cartilage is flexible connective tissues. Give reason? 2020

Short Answer carrying 3 marks

- a) What are the factors regulating the metamorphosis of insects? Give three points. 2016
- b) List three points on the importance of dorsal lip of blastopore as primary Organizer 2016
- c) What are the factors regulating the metamorphosis of insects? 2018
- d) What is the role of dorsal lip of blastopore as primary organizer? Write three points only. 2019
- e) Define Neoteny and Paedogenesis. Which animal is known as servant of water? 2020

Long Answer type Questions

- a) Discuss in detail, the development of brain with suitable diagrams. (12 marks) 2016
- b) Describe the development of kidney or brain in a vertebrate with suitable diagrams. 2018
- c) Discuss the organogenesis of kidney or heart in a vertebrate with suitable diagrams. 2019

UNIT 4. Histology

MCQ

- a) The hormone testosterone is secreted by 2016
(i) goblet cells
(ii) Sertoli cells
(iii) mucous cells
(iv) Leydig cells
- b) In obstructive jaundice, which digestion is seriously affected? 2016
(i) Vitamins
(ii) Fats
(ii) Proteins
(iv) Carbohydrates
- c) The cell junctions forming fluid tight zip-lock between the cells are called 2019

- i) Gap junctions
 - ii) Tight junctions
 - iii) Anchoring junctions
 - iv) Desmosomes
- d) The granulocytes are produced in the 2019
- i) Lymph gland
 - ii) Spleen
 - iii) Thyroid gland
 - iv) Bone marrow
- e) Glisson's capsule is present in 2020
- i) liver
 - ii) heart
 - iii) kidney
 - iv) stomach

Very short answers carrying 1 mark

- a) Name the scientist who isolated hormone insulin in the year 1911. 2016
- b) If the zymogen cells of a person stop functioning, what will happen to that person? 2016
- c) What is clinically called 'diabetic coma'? 2016
- d) In the event of an injury, if the lymphatics are not able to perform their function, what will happen to the red blood corpuscles of that person? 2018
- e) What is obstructive jaundice? 2018
- f) If the zymogen cells of a person are ill-developed, what will happen to the mode of secretion in his stomach? 2018
- g) In the presence of sunlight, what type of gland in the mammalian skin synthesizes vitamin D? 2019
- h) Why is blood called a connective tissue? 2020

Short Answer carrying 3 marks

- a) Draw and label the microscopic structures of intestine of a mammal. 2018
- b) Tabulate three different points between grey matter and white matter of spinal cord. 2019
- c) Name the three types of cells present in the Islet of Langerhans? 2020

Long Answer type Questions

- a) i) Draw and describe the histological structures of kidney or pancreas of mammal. (8 marks) 2016
- ii) Draw and label the microscopic structure of testis. (4 marks)

- b) i) Discuss the histological structures of spleen of a mammal with figures. 2016
(8 marks)
- ii) Draw and label the microscopic structure of an ovary or testis of a mammal.
(4marks) 2018
- c) i) Describe the histological structure of stomach of a mammal with illustration.(8marks)
- ii) Draw and label the microscopic structure of skin or lung of a mammal.
(4marks) 2019
- d) Define skin? Write the difference between sebaceous glands and sweat glands
Give eight important functions of the skin. (12 marks) 2020

UNIT 5. Biological Chemistry

MCQ

- a) The cholesterol, the most abundant steroid is present in 2016
(i) animal cell membrane
(ii) RNA
(iii) Golgi bodies
(iv) nucleus
- b) The enzyme lysozyme present in the saliva of man acts on 2016
(i) starch
(ii) milk
(i) glucose
(iv) antibacterial in action
- c) The nitrogen balance in a vertebrate body is maintained by 2018
i) Protein
ii) Carbohydrate
iii) Lipid
iv) Fatty acid
- e) A patient of diabetes mellitus is advised to take 2019
i) A balanced diet
ii) Protein- rich diet
iii) Fat –rich diet
iv) Carbohydrate- rich diet
- f) Lack of which one of the following is the reason for muscle glycogen not being converted back into glucose?
2019
i) Glucagon
ii) Phosphorylase
iii) Glucose phosphates
iv) Carbonic anhydrase

Very short answers carrying 1 mark

- a) Of the two major components of fats, which one gives the characteristic properties of fat? 2016
- b) Who proposed the name vitamins? 2020

Short Answer carrying 3 marks

- a) Mention three important properties of enzyme. 2016
- b) Define cofactor. Give two examples of cofactor. 2016
- c) Differentiate between glycogenolysis and glycogenesis giving three points only. 2016
- d) Differentiate between glycogenolysis and glycogenesis giving three points. 2018
- e) Differentiate between lipids and derived lipids. 2018
- f) List the coenzymes based on the functional characters and give one example of each group. 2018
- g) Define ketone body. Write two points on its utilities. 2018
- h) Differentiate between essential and non-essential amino acids. Give only three points. 2019
- i) Write three important biological functions of lipid. 2019
- j) What is oxidative decarboxylation? Name the enzyme complex responsible for this process. 2019
- k) Define cofactor. Give two examples of cofactor. 2019

Long Answer type Questions

- a) Describe the types of proteins on the basis of their structural complexity. Mention proteins. two examples of phosphoproteins (12 marks) 2016
- b) What is EMP pathway? Discuss in detail the different steps involved in this pathway. (12marks) 2016
- c) What is biological oxidation? Describe with special reference to the role of electron transport system. (12marks) 2018
- d) Describe the types of protein on the basis of their structural complexity. Write two points on the importance of protein. (12marks) 2018
- e) Enumerate the classification of enzymes giving their catalytic activities. Explain the mechanism of enzyme action. (12marks) 2019
- f) Explain the various steps of TCA cycle. Write the importance of this cycle. 2019
- g) Who proposed the double stranded DNA molecule? Write the important characters of double helical structure of DNA? (12 marks) 2020
- g) Who firstly introduced enzyme? Name the five classes of enzyme according to IUB? (12marks) 2020