

2018

P - I (1+1+1) H / 18 (N)

ZOOLOGY (Honours)

Paper Code : II-A

[New Syllabus]

Full Marks : 10

Time : Thirty Minutes

Important Instructions for OMR Sheet

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Answer *all* the questions in OMR sheet.

Choose the correct answer.

Each question carries 1 mark.

1. Glands behind the head of toads are aggregations of —
 - (A) Parotid glands
 - (B) Uropygial glands
 - (C) Femoral glands
 - (D) Scent glands

2. Cutaneous respiration occurs in —
 - (A) *Rana* sp.
 - (B) *Scoliodon* sp.
 - (C) *Calotes* sp.
 - (D) *Oryctolagus* sp.

3. Mammals evolved from —
 - (A) Cotylosour reptile
 - (B) Cyanodont reptile
 - (C) Dinosaur
 - (D) Pterosaurs

4. Wheel organ is found in —
 - (A) *Balanoglossus* sp.
 - (B) *Petromyzon* sp.
 - (C) *Myxine* sp.
 - (D) *Branchiostoma* sp.

Turn Over

5. Air bladder in fishes does not help in —

- (A) Respiration
- (B) Excretion
- (C) Sound production
- (D) Behaving as hydrostatic organ

6. Kidney of *Calotes* is —

- (A) Mesonephric
- (B) Metanephric
- (C) Pronephric
- (D) Anephric

7. Which of the following feather is a typical flight feather ?

- (A) Quill
- (B) Contour
- (C) Covert
- (D) Filoplume

8. The nail, claws, horns and hoofs in mammals are produced by —

- (A) Bone
- (B) Stratum corneum
- (C) Dermis
- (D) Muscles

9. The heart of man is —

(A) cardiogenic

(B) digenic

(C) neurogenic

(D) myogenic

10. Scutes are epidermal scales found on/in —

(A) fishes

(B) shell of turtles

(C) lizards

(D) tail of snakes

2018

ZOOLOGY (Honours)

Paper Code : II-B

[New Syllabus]

Full Marks : 40

Time : One Hour Thirty Minutes

The figures in the margin indicate full marks.

Unit - 1

(Life and Diversity : Urochordates to Mammals)

1. Answer any two questions :

4×2=

- (a) Write the salient features of primates with suitable examples.
- (b) Write short note on soaring.
- (c) Describe the structure and function of scroll valve of *Scoliodon* sp.
- (d) State the different functions of air sacs in Pigeon.

2. Answer any one question :

12×1=

- (a) Distinguish Metatheria and Eutheria. Write the anatomical peculiarities Marsupialia. Add a note on Marsupium. 4+4+4=12
- (b) Define the term angle of attack and drag. State the principle of aerodynamics in birds. Describe briefly the different phases of flight mechanism. 2+4+6=12
- (c) Write anatomical peculiarities of *sphenodon* sp. Write a short note on pineal eye in reptiles. What are hemipenes ? 6+4+2=12

Unit - 2

(Life and Diversity : Comparative anatomy and special features)

3. Answer any *two* questions :

- (a) Write short note antler. 4×2=8
- (b) Write short note on ruminant stomach.
- (c) Write a short note on hair.
- (d) What are aortic arches ?

4. Answer any *one* question :

- (a) Describe the location and principal functions of each of the following skin glands : 12×1=12
3×4=12
 - (i) Sweat gland
 - (ii) Scent gland
 - (iii) Sebaceous gland
 - (iv) Mammary gland
 - (b) Briefly describe the structure of tooth. Give examples of two mammals where teeth are completely absent in all stages of life. What is dental formula ? Add a note on Tusk. 4+2+2+4=12
 - (c) Give a comparative account of heart among vertebrates. 12
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2018

ZOOLOGY (Honours)

Paper Code : III-A

[New Syllabus]

Full Marks : 10

Time : Thirty Minutes

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Answer *all* the questions in OMR sheet.

Choose the correct answer.

Each question carries 1 mark.

1. Standard deviation is the square of—
 - (A) mode
 - (B) standard error
 - (C) variance
 - (D) regression

2. Cluster X is—
 - (A) multiple sequence alignment tool
 - (B) protein secondary structure predicting tool
 - (C) data retrieving tool
 - (D) nucleic acid sequence analysis tool

3. Which of the following is not a measure of central tendency?
 - (A) Mean
 - (B) mode
 - (C) range
 - (D) median

4. Project tiger was launched in India in the year—
 - (A) 1973
 - (B) 1975
 - (C) 1978
 - (D) 1972

Turn Over

5. In India, first Biosphere Reserve was established in —
- (A) Nanda Devi
 - (B) Corbett National Park
 - (C) Nilgiri
 - (D) Manas
6. Which stage of life cycle of rice weevil causes maximum damage to the grain —
- (A) Egg
 - (B) Larva
 - (C) Pupa
 - (D) Adult
7. Maximum quantity of honey is obtained from —
- (A) *Apis dorsata*
 - (B) *Apis mellifera*
 - (C) *Apis florea*
 - (D) *Apis indica*
8. Indian Tasar Silk is obtained from —
- (A) *Antheraea mylitta*
 - (B) *Antheraea pernyi*
 - (C) *Antheraea yamamai*
 - (D) All of the above

9. Dropsy disease in fish is caused by —

- (A) Bacteria
- (B) Virus
- (C) Protozoa
- (D) Fungi

10. In honey bee drone develops from —

- (A) fertilized egg
 - (B) unfertilized egg
 - (C) schizogony
 - (D) asexual reproduction
-

2018

ZOOLOGY (Honours)

Paper Code : III-B
[New Syllabus]

Full Marks : 40

Time : One Hour Thirty Minutes

*The figures in the margin indicate full marks.***Unit - 1****(Applied Zoology)**1. Answer any *two* questions :

4×2=

- (a) Define Major and Minor pest with suitable example.
- (b) Define Propolis and state its uses.
- (c) Write the composition and uses of honey.
- (d) Define Sporadic and Potential pests with suitable example.

2. Answer any *one* question :

12×1=12

- (a) Describe the life cycle, damaging nature and control measures of *Sitophilus oryzae*. 6+3+3=12
- (b) Describe the hatchery technology of Fresh Water Prawn Culture. What do you mean by extensive and intensive type of Prawn Culture? 8+4=12
- (c) Write short notes on —
 - (i) Epizootic Ulcerative Syndrome (EUS) in fishes.
 - (ii) Castes of Bee colony. 6+6=12

Unit - 2

(Conservation Biology and Wildlife, Biostatistics and Bioinformatics)

$$4 \times 2 = 8$$

3. Answer any *two* questions :

- (a) Define standard deviation and standard error.
- (b) Give an account of protein sequence database.
- (c) Write a short note on Project Lion in India.
- (d) Write a short note on causes of depletion of wildlife in India.

4. Answer any *one* question :

$$12 \times 1 = 12$$

(a) Write short note on :

$$3 \times 4 = 12$$

- (i) EMBL
 - (ii) Nucleotide sequence database
 - (iii) Clustal X
 - (iv) NCBI
- (b) What do you mean by conservation? Describe *ex situ* and *in situ* conservation processes. Write the common names and scientific names of one endemic endangered species of India from each of these groups — mammal, reptile, bird and amphibia.

2018

P - II (1+1+1) H / 18 (N)

ZOOLOGY (Honours)

Paper Code : V-A

(Histology, Histochemistry, Microscopy and
Analytical Techniques)

[New Syllabus]

Full Marks : 10

Time : Thirty Minutes

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Answer *all* the questions in OMR sheet.

Choose the correct answer.

Each question carries 1 mark.

1. _____ provides nutrition to the developing spermatozoa —
 - (A) Spermatogonia
 - (B) Sertoli cell
 - (C) Tunica albuginea
 - (D) Leydig cell

2. Which of the following is a neutral stain ?
 - (A) Crystal violet
 - (B) Eosin
 - (C) Haematoxylin
 - (D) Lishman's stain

3. DNA molecules run through an agarose gel become visible under UV light due to its interaction with —
 - (A) Ethidium bromide
 - (B) Agarose
 - (C) CBBR250
 - (D) APS

4. Surface structure of a bacterial cyst can be visualised by—
 - (A) SEM
 - (B) TEM
 - (C) Phase-Contrast microscope
 - (D) Both A and B

Turn Over

5. The thick filaments of skeletal muscle fibres —
- (A) consist of both actin and myosin.
 - (B) are present in the A-band
 - (C) In the Z-line itself.
 - (D) are present in the I-band.
6. Which of the following cells manufacture and release mineralocorticoids
- (A) cells of Zona glomerulosa
 - (B) cells of zona reticularis
 - (C) cells of Zona fasciculata
 - (D) chromaffin cells
7. The chief cells and parietal cells are located in _____ part of aliment canal.
- (A) small intestine
 - (B) large intestine
 - (C) oesophagus
 - (D) stomach
8. Which one of the following is not example of basic dye ?
- (A) Crystal violet
 - (B) Methylene blue
 - (C) Basic fuchsin
 - (D) Picric acid

9. Why in staining of nucleus by haematoxylin mordant is used ?

- (A) The chromophoric group of haematoxylin is cationic
- (B) The chromophoric group of haematoxylin is an ionic
- (C) The chromophoric group of haematoxylin contains both cationic and anionic groups
- (D) None of the above

10. In the equation $A = \epsilon bc$, what quantity is represented by " ϵ " ?

- (A) Absorbance
 - (B) Molar extinction coefficient
 - (C) Path length
 - (D) None of these
-

2018

ZOOLOGY (Honours)

Paper Code : V-B

[New Syllabus]

Full Marks : 40

Time : One Hour Thirty Minutes

*The figures in the margin indicate full marks.***Unit - 1****(Histology and Histochemistry)**1. Answer any *two* of the following :

4×2=8

- (a) Describe the process of Double staining of histological tissue sections.
- (b) What is numerical aperture ? State the function of condenser lens.
- (c) With suitable diagram elucidate the histological details of mammalian liver.
- (d) Write the criteria of a good fixative and explain why mixed fixative is preferred over primary fixative ?

3+1=4

2. Answer any *one* question :

12×1=12

- (a) Point out the differences in the histological organization of oesophagus and small intestine of mammalian digestive tract. Add a note on the histological and functional aspects of thyroid follicle.

(3+3)+(3+3)

(b) Write a short note on —

- (i) PAS staining Method
- (ii) Haversian system of bone tissue.

6+6

- (c) Define mordant. Explain the chemical principle of fixation. What is vital stain? State the composition of Bouin's fluid and Carnoy's fixative.

2+4+3+3=12

Unit - 2

(Microscopy and Analytical Techniques)

3. Answer any *two* questions :

4×2=8

- (a) State the working principle and biological applications of density gradient centrifugation.
- (b) Differentiate Scanning Electron Microscope (SEM) and Transmission Electron Microscope (TEM).
- (c) Explain the Lambert Beer's Law.
- (d) Point out the utility of TEMED and APS in polyacrylamide gel electrophoresis (PAGE) technique.

4. Answer any *one* question :

12×1=12

- (a) Define mobile phase. Explain the methods for separation of aminoacids using paper chromatography. State the biological and analytical application of HPLC.
- (b) Give a brief account on the methodology of Polyacrylamide Gel Electrophoresis mentioning its clinical application.
- (c) Write the principle of electrophoresis. Why SDS and bromophenol blue are used in SDS-polyacrylamide gel electrophoresis. How molecular weight of a protein can be determined by SDS polyacrylamide gel electrophoresis?

3+3+6=12

2018

ZOOLOGY (Honours)

Paper Code : VI-A

[New Syllabus]

Full Marks : 10

Time : Thirty Minutes

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Each question carries 1 mark.

1. Microtubular structure of cilium is called —
 - (A) basal body
 - (B) ciliary rootlet
 - (C) axonem
 - (D) kinetosome

2. What part of the cell forms nuclear envelope during telophase ?
 - (A) Cytoskeleton
 - (B) Centriole
 - (C) Golgi complex
 - (D) Endoplasmic reticulum

3. The cells lacking endoplasmic reticulum are —
 - (A) amphibian monocyte
 - (B) mature erythrocytes of mammals
 - (C) mature leucocytes
 - (D) mammalian monocyte

4. Mitochondria are not found in —
 - (A) liver cell
 - (B) nerve cell
 - (C) muscle cell
 - (D) mature RBC

Turn Over

5. Lysosomes are absent in —
- (A) erythrocytes
 - (B) plasma cells
 - (C) nerve cells
 - (D) muscle cells
6. Alleles that product independent effects in heterozygous conditions are called.
- (A) codominant allele
 - (B) haplosufficient allele
 - (C) complementary allele
 - ~(D) supplementary allele
7. Crossing over occurs at —
- (A) 1 strand stage
 - (B) 2 strand stage
 - (C) 3 strand stage
 - (D) 4 strand stage
8. Chromosome theory of sex determination was propounded by —
- (A) McClung
 - (B) Balbiani
 - (C) Goldschmidt
 - (D) Mendel

9. Which of the following is sex linked ?

(A) sickle-cell anaemia

(B) albinism

(C) haemophilia

(D) phenylketonuria

10. The loss of one single chromosome create a condition called —

(A) trisomy

(B) nullisomy

(C) monosomy

(D) haploid

2018

ZOOLOGY (Honours)

Paper Code : VI-B

[New Syllabus]

Full Marks : 40

Time : One Hour Thirty Minute

*The figures in the margin indicate full marks.***Unit - 1****(Cell Biology)**1. Answer any *two* questions :

4×2=

- (a) Briefly describe the various functions performed by plasma membrane.
- (b) Write short note on Endocytosis.
- (c) Describe briefly how secretory proteins find their destination.
- (d) Write a short note on MPF.

2. Answer any *one* question :

12×1=

- (a) Describe centrosome cycle. Describe how mitotic spindles are formed with appropriate figure. 6+(4+2)=12
- (b) What is the structural component of microfilaments? Describe with diagram how polymerization of microfilament occur. Add a note on Actin filament treadmilling. 2+8+2=12
- (c) Define Lysosome. Describe the structure and functions of Lysosome. Add a note on Lysosomal enzymes. 2+(3+4)+3=12

Unit - 2

(Genetics)

3. Answer any *two* questions :

4×2=8

(a) What do you mean by reciprocal cross ? Why it is important ?

(b) Why pattern baldness is rarely found in woman ? Describe with appropriate cross.

(c) How Mendel came to the idea that — “Genes do not blend, but remain discrete (particulate) as they are transmitted” ?

(d) Write a short note on Down syndrome.

4. Answer any *one* question :

12×1=12

(a) A male mouse with brown fur colour is mated to two different female mice with black fur. Black female 1 produces a litter of 9 black and 7 brown pups. Black female 2 produces 14 black pups.

Choose symbols for each alleles and identify the genotypes of the brown male and two black females. Explain which of the phenotype is dominant ? Explain your answer with suitable cross. Define recessive trait.

6+2+2+2=12

(b) Define Sex Chromosome. Describe the experiment that led the Genic Balance theory. Write the role of Y-Chromosome in sex determination of *Drosophila* and human.

1+6+1+4=12

(c) Describe the experiment of Griffith. Why it is important ?

8+4=12

2018

ZOOLOGY (Honours)

Paper Code : VII-A

[New Syllabus]

Full Marks : 10

Time : Thirty Minutes

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1. Transparent mucous membrane covering the inner surface of eyelid is —
 - (A) palpebrae
 - (B) lacrimal apparatus
 - (C) cornea
 - (D) conjunctiva

2. Membrane attached to the stapes —
 - (A) tympanic membrane
 - (B) oval window
 - (C) round window
 - (D) tectorial membrane

3. The internal C-shaped crest of the right atrium which indicates the opening for the Superior vena cava and Inferior vena cava is —
 - (A) crista terminalis
 - (B) ligamentum arteriosum
 - (C) fossa ovalis
 - (D) trabeculae carneae

4. The valve responsible for preventing back flow of blood from the lungs into the heart —
 - (A) tricuspid valve
 - (B) bicuspid valve
 - (C) aortic semilunar valve
 - (D) pulmonary semilunar valve

Turn Over

5. Lactose is made up of one glucose and one galactose unit linked by —

(A) β - 1,4 linkage

(B) α - 1,4 linkage

(C) β - 1,6 linkage

(D) α - 1,6 linkage

6. In glycolysis, the pyruvic acid is reduced to lactic acid anaerobically in —

(A) liver

(B) muscle

(C) brain

(D) skin

7. The electron transport chain occurs in —

(A) outer mitochondrial membrane

(B) inner mitochondrial membrane

(C) cytoplasm

(D) mitochondrial matrix

8. Which of the following amino-acids is considered both ketogenic and glucogenic ?

(A) Aspartate

(B) Alanine

(C) Proline

(D) Tyrosine

9. Enzyme increase the speed of a chemical reaction by —
- (A) changing the equilibrium
 - (B) increasing the energy of reactant molecule
 - (C) lowering the energy of activation
 - (D) changing the mode of the reaction.
10. A neurotransmitter is a molecule that crosses the —
- (A) synaptic cleft
 - (B) synaptic cleft and the postsynaptic membrane
 - (C) Presynaptic membrane and the synaptic cleft
 - (D) postsynaptic membrane
-

2018

ZOOLOGY (Honours)

Paper Code : VII-B

[New Syllabus]

Full Marks : 40

Time : One Hour Thirty Minutes

The figures in the margin indicate full marks.

Unit - 1

(Animal Physiology)

1. Answer any *two* questions : 4×2=8
- (a) Write a note on chloride shift.
 - (b) State briefly the different means of CO₂ transport in blood.
 - (c) What do you mean by cortical and juxtamedullary nephrons ?
 - (d) Draw and describe the structure of a nephron.
2. Answer any *one* question : 12×1=12
- (a) With a neat diagram, briefly describe the structure of Cochlea. State the importance of Reissner's membrane. What is organ of Corti ? Describe its structure with diagram. (2+4)+2+1+(2+1)=12
 - (b) Write short notes on — 4+4+4=12
 - (i) Tubular Secretion in nephron.
 - (ii) Erythropoiesis.
 - (iii) Alzheimer's disease.

- (c) Define synapse. Explain briefly the types of synapse and the synaptic transmission of nerve impulse with suitable diagram. 12

Unit - 2

(Biochemistry)

3. Answer any *two* questions : 4×2=8
- (a) Briefly write on the decarboxylation steps of TCA cycle.
 - (b) What are co-enzymes? Write the significance of Michaelis-Menten constant.
 - (c) Write the role of the following enzymes during glycogen synthesis :
 - (i) UDP-Glucose pyrophosphorylase
 - (ii) Glycogen synthase
 - (d) Write short note on mutarotation.
4. Answer any *one* question : 12×1=12
- (a) Define carbohydrates. What is anomerism? Draw the structures of disaccharides having β -1,4 glycoside bond and α -1,4 glycoside bond. Define chiral carbon. 2+4+4+2=12
 - (b) Name the complexes I to V of ETC. Describe how chemiosmotic gradient is generated in mitochondria. Draw and describe the structure of complex V of ETC. How chemiosmotic gradient is coupled with ATP production? 2+4+4+2=12
 - (c) Classify enzymes on the basis of the reactions they perform with appropriate example. 12

2018

ZOOLOGY (Honours)

Paper Code : IX-A

[New Syllabus]

Full Marks : 10

Time : Thirty Minutes

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Answer *all* the questions in OMR sheet.

Choose the correct answer.

Each question carries 1 mark.

1. Father of taxonomy is —

- (A) Lamarck
- (B) Darwin
- (C) Linnaeus
- (D) Hook

2. "Law of priority" covers the period —

- (A) From 1758 to present
- (B) From 1858 to present
- (C) From 1658 to present
- (D) From 1958 to present

3. Waggle dance is shown by —

- (A) Ant
- (B) Butterfly
- (C) Sparrow
- (D) Honeybee

4. Many ant species lay scent trails by which they find their way — this is the function of —
- (A) Aggressive Behaviour
 - (B) Parental Investment
 - (C) Parental Care
 - (D) Pheromone
5. A relatively permanent change in behaviour as a result of experience —
- (A) Innate behaviour
 - (B) Learning behaviour
 - (C) Simple reflexes
 - (D) Communication
6. "On the origin of species by means of natural selection" is the book of —
- (A) Huxley
 - (B) Hooker
 - (C) Lamarck
 - (D) Darwin
7. Which factor does not affect Hardy-Weinberg equilibrium —
- (A) Migration
 - (B) Mutation
 - (C) Selection
 - (D) Imprinting

8. *Neoceratodus* is found in —

- (A) Australian realm
- (B) Ethiopian realm
- (C) Neotropical realm
- (D) Oriental realm

9. Which adaptation is also called “speed adaptation” ?

- (A) Aquatic adaptation
- (B) Cursorial adaptation
- (C) Volant adaptation
- (D) Scansorial adaptation

10. Which of the following is closest relative man ?

- (A) Chimpanzee
- (B) Gorilla
- (C) Orangutan
- (D) Gibbon

2018

ZOOLOGY (Honours)

Paper Code : IX-B

[New Syllabus]

Full Marks : 40

Time : One Hour

The figures in the margin indicate full marks.

Unit - I

(Evolution and Animal Behaviour)

1. Answer any two questions :

- (a) What do you mean by taxonomy ? Differentiate between microtaxonomy and macrotaxonomy.
- (b) State the principle of priority in Zoological Nomenclature.
- (c) How altruism is different from reciprocal altruism ?
- (d) What is kinship ? Write its different types.

2. Answer any one question :

- (a) Why male parent in birds is more parental compared to female ? Explain briefly the Eusociality in animals. Explain family, clan and example.
- (b) Write about the communication in honey bees. Differentiate between instinctive and learned behaviour. Write the different types of migration among birds.
- (c) Define species. Describe in detail the Biological species concept drawbacks. Write the difference between homonym and synonym.

Unit - 2

(Adaptation and Evolution)

3. Answer any *two* questions :

4×2=8

- (a) "Industrial melanism in peppered moth is an best example of natural selective." Justify the statement.
- (b) Write a note on Adaptive Radiation.
- (c) What do you mean by Founder effect and Population bottleneck in evolution ?
- (d) What is adaptation ? Write the structural modifications for aquatic adaptation.

4. Answer any *one* question :

12×1=12

- (a) Define population. State Hardy-Weinberg's law of equilibrium. Discuss its salient features and significance. 2+4+6
 - (b) What is isolation ? Discuss the various isolating barrier and the significance of isolation in evolution. 2+5+5
 - (c) What do you mean by fossil and fossilization ? Describe in brief the different processes of fossilization. Enumerate the different methods for determination of age of fossil. 4+4+4
-

2018

ZOOLOGY (Honours)

Paper Code : X-A

[New Syllabus]

Full Marks : 10

Time : Thirty Minutes

Important Instructions for OMR Sheet

1. Write / Fill your correct Subject Name, Subject Code & Paper Code in the space provided on the top of the OMR sheet (Subject Codes are given on the back of the OMR sheet & Paper Code in the Question Paper.)
2. Write / Fill your Name, Roll number, Registration number, Regn. Session, Exam Date and Exam Session in the space provided on the OMR Sheet.
3. Each item has four alternative responses marked (A), (B), (C) and (D). You have to darken the circle as indicated below on the correct response against each item.
4. Your responses to the items are to be indicated in the **OMR Sheet given inside the Paper Booklet only**. If you mark at any place other than in the circle in the OMR Sheet, it will not be evaluated.
5. If you write your Phone Number in the OMR Sheet or use abusive language or employ any other unfair means, you will render yourself liable to disqualification.
6. You have to return the OMR Sheet to the invigilators at the end of the examination compulsorily and must not carry it with you outside the Examination Hall.
7. Use only Blue/Black Ball point pen. Use of any mobile phone, calculator or log table etc. in examination hall, is prohibited.

Answer *all* the questions in OMR sheet.

Choose the correct answer.

Each question carries 1 mark.

1. Bacterial cell wall is made up of —
 - (A) Phospholipid
 - (B) Cellulose
 - (C) Peptidoglycan
 - (D) Dextran

2. The chief constituent of agar is —
 - (A) Polysaccharide
 - (B) Fat
 - (C) Phosphate
 - (D) Potassium

3. Which one of the following is a primary lymphoid organ ?
 - (A) Spleen
 - (B) Thymus
 - (C) Lymph node
 - (D) Peyer's patch

4. A virion is —

- (A) an entire virus particle consisting of a nucleic acid core and a protein coat
- (B) a nucleic acid core of a virus
- (C) a protein coat of a virus
- (D) an antiviral agent

5. Which one of the following antibodies can cross placenta ?

- (A) IgA
- (B) IgE
- (C) IgM
- (D) IgG

6. The vector of *Schistosoma* sp. is a —

- (A) Cyclops
- (B) Mite
- (C) Snail
- (D) Flea

7. Malignant malaria is caused by —

- (A) *Plasmodium falciparum*
- (B) *Plasmodium ovale*
- (C) *Plasmodium vivax*
- (D) *Plasmodium malariae*

8. Which one of the following parasites has only one host ?
- (A) *Plasmodium vivax*
 - (B) *Entamoeba histolytica*
 - (C) *Trypanosoma gambiense*
 - (D) *Taenia solium*
9. Which one of the following is an infective stage of *Taenia solium* ?
- (A) Rhabditiform
 - (B) Microfilaria
 - (C) Metacercaria
 - (D) Cysticercus
10. Which one of the following disease is not transmitted by mosquitoes ?
- (A) Dengue Fever
 - (B) Yellow Fever
 - (C) Relapsing Fever
 - (D) Black Water Fever
-

2018

ZOOLOGY (Honours)

Paper Code : XI-A

[New Syllabus]

Full Marks : 10

Time : Thirty Minutes

Important Instructions for OMR Sheet

1. Write / Fill your correct Subject Name, Subject Code & Paper Code in the space provided on the top of the OMR sheet (Subject Codes are given on the back of the OMR sheet & Paper Code in the Question Paper.)
2. Write / Fill your Name, Roll number, Registration number, Regn. Session, Exam Date and Exam Session in the space provided on the OMR Sheet.
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Answer *all* the questions in OMR sheet.

Choose the correct answer.

Each question carries 1 mark.

1. Which one is sedimentary cycle ?
 - (A) Oxygen cycle
 - (B) Hydrogen cycle
 - (C) Nitrogen cycle
 - (D) Phosphorus cycle

2. The final stable community in an ecological succession is called —
 - (A) Final Community
 - (B) Ultimate Community
 - (C) Climax Community
 - (D) Seral Community

3. When both partners are affected negatively, the nature of interaction is —
 - (A) Commensalism
 - (B) Competition
 - (C) Predation
 - (D) Amensalism

Turn Ov

4. The carrying capacity of a population is determined by its —

- (A) Population growth rate
- (B) Natality
- (C) Mortality
- (D) Limiting Resources

5. The functional status of an organism in its community is called —

- (A) Habitat
- (B) Niche
- (C) Biome
- (D) Habit

6. Minamata disease was caused by pollution of water by —

- (A) Mercury
- (B) Léad
- (C) Tin
- (D) Methyl iso cyanate

7. Which of the following is not an air pollutant ?

- (A) Sulphur dioxide
- (B) Sewage
- (C) CFC's
- (D) SPM

8. Which of the following is not green house gas ?
- (A) CO_2 (Carbon dioxide)
 - (B) Nitrous oxide
 - (C) CH_4 (Methane)
 - (D) Nitrogen (N_2)
9. Environmental Impact Assessment (EIA) is mandatory under which one of the following India legislations —
- (A) Indian Forest Act
 - (B) Air (Prevention and Control of Pollution) Act
 - (C) Wildlife Project Act
 - (D) Environment (Protection) Act
10. The causative agent of botulism is —
- (A) *Clostridium tuberculosis*
 - (B) *Clostridium tetani*
 - (C) *Clostridium botulinum*
 - (D) *Mycobacteria paratuberculosis*
-

2018

ZOOLOGY (Honours)

Paper Code : XI-B

[New Syllabus]

Full Marks : 40

Time : One Hour Thirty Minutes

The figures in the margin indicate full marks.

Unit - 1

(Ecology)

1. Answer any *two* questions : 4×2=8
- (a) Differentiate between Net Primary Productivity and Gross Primary Productivity.
 - (b) What do you mean by stable and expanding age distribution ?
 - (c) Define Commensalism and Mutualism with examples.
 - (d) What do you mean by carrying capacity ?
2. Answer any *one* question : 12×1=12
- (a) Explain 'Y' shaped energy flow model with its components and significance. What do you mean by the term ecotone and edge effect ? Define competition. 6+4+2=12
 - (b) Describe the survivorship curve based on survivors and age with examples. Define predation. Write the characteristic features of energy flow. 6+2+4=12
 - (c) Briefly explain the Nitrogen cycle. Explain the 'S' shaped growth curve of population. What do you mean by immigration and emigration ? 5+5+2=12

Unit - 2

(Environmental Biology and Toxicology)

3. Answer any *two* questions :

4×2=8

(a) What do you mean by Biomagnification ?

(b) Write a note on Minamata disease.

(c) Write briefly on arsenic poisoning.

(d) Write note on particulate matters.

4. Answer any *one* question :

12×1=12

(a) Define soil pollution. What are the principal types of soil pollutants ?
Mention some principal anthropogenic sources of soil pollutants.

2+6+4=12

(b) Write the effects of fertilizer on human and plants. Add a note on heavy metal pollution. State the impacts of pesticides on human health.

4+4+4=12

(c) What are primary and secondary pollutants ? What are biodegradable and non biodegradable pollutants ? What is photochemical smog ?

4+6+2=12