

OBJECTIVE

NOTE: You have four choices for each objective type question as A , B , C and D . The choice which you think is correct , fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question.

QUESTION NO. 1

- 1 Complete immobilization of muscle leads to muscle weakness and severe
(A) Atrophy (B) Cramp (C) Tetany (D) Trauma
- 2 Hormone that suppresses ovulation is
(A) Testosterone (B) Oestrogen (C) Progesterone (D) Gastrin
- 3 The yellowish glandular structure corpus luteum , starts secreting a hormone
(A) LH (B) FSH (C) Oestrogen (D) Progesterone
- 4 Which represents the dorsal and both lateral lips of blastopore ?
(A) Primitive streak (B) Henson's Node (C) Coelom (D) Neurocoel
- 5 Healing of fracture and repair of the skin are examples of
(A) Reproduction (B) Mutation (C) Regeneration (D) Induction
- 6 Miescher extracted a white substance from the nuclei of human cells and fish sperm called
(A) Nuclein (B) Penicillin (C) Mucin (D) Adenine
- 7 Each bivalent has chromatids wrap around each other
(A) 02 (B) 04 (C) 06 (D) 08
- 8 In diplotene , homologous chromosomes remain united by their point of interchange called
(A) Bivalent (B) Centromere (C) Synapse (D) Chiasmata
- 9 ABO blood group system was discovered by
(A) Bernstein (B) Punnett (C) Karl Landsteiner (D) Wiener
- 10 Organisms that have a foreign gene inserted into them are called
(A) Genome (B) Transgenic (C) Bioreactor (D) Nutrasweets
- 11 Armadillos armored mammals live only in
(A) Africa (B) Asia (C) America (D) Australia
- 12 The food relationship predator-prey creates a
(A) Chain (B) Cycle (C) Stage (D) Circle
- 13 Phytoplankton includes cyanobacteria which serve as
(A) Decomposers (B) Feeders (C) Crustaceans (D) Producers
- 14 The driving force behind all of natural cycles is
(A) Sun (B) Air (C) Water (D) Soil
- 15 The uptake of sodium in the thick loop of Henle is promoted by the action of
(A) ADH (B) Aldosterone (C) Oxytocin (D) Testosterone
- 16 Which emulsifies fats in small intestine ?
(A) Bile (B) Glycogen (C) Cholesterol (D) Lipoprotein
- 17 Angular thickenings in the primary walls are present in
(A) Parenchyma cells (B) Sclerenchyma cells (C) Collenchyma cells (D) Tracheids

SECTION-I

QUESTION NO. 2 Write short answers any Eight (8) of the following

16

1	Define lithotripsy
2	What are poikilotherms ? Give one example.
3	What is homeostasis ?
4	Differentiate between tendon and ligament
5	Briefly write hematoma formation
6	Give composition of filaments of skeletal muscle
7	How sperms travel from testes to outside ?
8	Define ovulation and menopause
9	What are Prairies and Savanna ?
10	Briefly describe the conditions of Taiga
11	What are the effects of ozone layer ?
12	Define eutrophication. What are its effects ?

QUESTION NO. 3 Write short answers any Eight (8) of the following

16

1	What are Neurotransmitters ? Give their examples
2	Define Gibberellins. Give their two commercial applications
3	Define Epilapsy. Give its treatment
4	Define multiple alleles. Give an example
5	Differentiate between homozygous and heterozygous
6	Give any two adverse effects of maternal foetal Rh-incompatibility
7	What is Recombinant DNA ?
8	Define palindromic sequences. Give one example
9	Compare molecular scissors and vectors
10	Define the term commensalism by giving an example
11	Differentiate between Ammonification and Nitrification
12	What is parasitism ?

QUESTION NO. 4 Write short answers any Six (6) of the following

12

1	Define growth correlations
2	Differentiate between inhibitory effects and compensatory effects is apical dominance
3	Differentiate between purines and pyrimidines bases
4	Name any four important enzymes involved in DNA Replication
5	What is semiconservative replication of DNA ?
6	Why interphase is called resting phase ?
7	Compare cytokinesis in animal cell with cytokinesis in plant cell
8	What is endosymbiont hypothesis ?
9	What do you mean by descent with modification ?

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

Q.5.(A)	Give major homeostatic functions of liver
(B)	What is nitrogen cycle ? Discuss various steps of nitrogen cycle
Q.6.(A)	Write sliding filament model of muscle contraction in detail
(B)	Write in detail Watson and Crick's model of DNA
Q.7.(A)	Define Synapse. How nerve impulse passes from one neuron to another
(B)	Write note on deforestation and afforestation
Q.8.(A)	Discuss female reproductive system in Human female
(B)	Explain Diabetes mellitus and its genetic basis
Q.9.(A)	Write a note on neurulation in chick development
(B)	How is comparative embryology the evidence of evolution ?

BIOLOGY
GROUP : SECOND

D4K-II-21
OBJECTIVE

TIME: 20 MINUTES
MARKS: 17

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QUESTION NO. 1

- | | |
|----|---|
| 1 | The most critical phase of mitosis is |
| | (A) Metaphase (B) Prophase (C) Anaphase (D) Telophase |
| 2 | Pairing of homologous chromosomes starts in |
| | (A) Leptotene (B) Zygotene (C) Pachytene (D) Diplotene |
| 3 | The basic unit of biological information is called |
| | (A) Locus (B) DNA (C) Gene (D) Inheritance |
| 4 | The enzyme, which seals the forigen piece of DNA or gene into vector, is called |
| | (A) Restriction enzyme (B) DNA cutter (C) DNA polymerase (D) DNA ligase |
| 5 | According to endosymbiotic hypothesis , the aerobic bacteria develops into |
| | (A) Nucleus (B) Lysosomes (C) Mitochondria (D) Ribosomes |
| 6 | The relationship between insects and flowering plant is an example of |
| | (A) Mutualism (B) Parasitism (C) Commensalism (D) Predation |
| 7 | Limentic phytoplankton includes |
| | (A) Mosses (B) Cynobacteria (C) Algae (D) Bacteria |
| 8 | The atmosphere gas behaves like glass sheet of green house is |
| | (A) Oxygen (B) Hydrogen (C) Carbon dioxide (D) Nitrogen |
| 9 | Which one of the following is the most toxic nitrogenous waste in animals ? |
| | (A) Urea (B) Ammonia (C) Uric acid (D) Trimethylamine |
| 10 | The incidence of calcium oxalate type kidney stone |
| | (A) 60 % (B) 65 % (C) 70 % (D) 75 % |
| 11 | The long tubular Sclerenchyma cells found in xylem are |
| | (A) Fibers (B) Sclereides (C) Vessels (D) Cork cells |
| 12 | All the following bones are associated with appendicular skeleton except |
| | (A) Femur (B) Radius (C) Ulna (D) Ribs |
| 13 | Ethene promotes flowering in |
| | (A) Pine apple (B) Pears (C) Tomatoes (D) Rubber plant |
| 14 | Evolution of pollen tube is parallel to the evolution of |
| | (A) Stem (B) Thorn (C) Seed (D) Branch |
| 15 | A little distance from apex of root and shoot lies the zone of |
| | (A) Elongation (B) Maturation (C) Differentiation (D) Isolation |
| 16 | Accetabularia is an/a |
| | (A) Angiosperm (B) Bryophyte (C) Alga (D) Fungus |
| 17 | The particular array of chromosomes that an individual possesses is called |
| | (A) Genotype (B) Karyotype (C) Genome (D) Gene pool |

QUESTION NO. 2 Write short answers any Eight (8) of the following

16

1	Differentiate between Hypotonic and Hypertonic solutions
2	Explain the role of contractile vacuole in Amoeba
3	What is vasodilation and vasoconstriction ?
4	What is moulting ?
5	Name the unpaired bones of skull
6	Explain in detail the Hinge Joint
7	Write any two disadvantages of cloning
8	Write down the role of pollen tube in evolution
9	Explain the life in limnetic zone
10	Write Human effects in temperate deciduous forests
11	Write any two consequences of population explosion
12	Differentiate between deforestation and afforestation

QUESTION NO. 3 Write short answers any Eight (8) of the following

16

1	How gibberellins are commercially produced ? Write their commercial applications
2	Distinguish between ganglia and nerves
3	Write the symptoms of congenital deficiency and later in life deficiency of thyroxin
4	How linked genes can be separated ? Write the linkage group on human chromosome 11
5	What are autosomes ? How many autosomes are present in grass hopper ?
6	Differentiate between homozygote and heterozygote
7	Define restriction enzymes and palindromic sequences
8	What are plasmids ? Give two examples
9	Define gene frequency. What is main principle of methods used for gene sequencing
10	Differentiate between habitat and niche
11	Define mycorrhiza. Give an example
12	What do you mean by nitrogen cycle ? How nitrogen of organic material is converted into NH ₃

QUESTION NO. 4 Write short answers any Six (6) of the following

12

1	Differentiate between area pellucida and area opaca
2	What is the difference between growth and embryonic development ?
3	Define point mutation with an example
4	Define one gene one polypeptide hypothesis and transformation
5	What is karyotype ? Give its significance
6	How does cytokinesis occurs in plants and animals ?
7	Differentiate between Malignant and Benign tumors
8	Define species and gene pool
9	Define Biogeography and Hydrothermal vents

SECTION-II

Note: Attempt any Three questions from this section

8 x 3 = 24

Q.5.(A)	Write a comprehensive note on dialysis
(B)	What is parasitism ? Write down its significance
Q.6.(A)	What are joints ? Describe their different types
(B)	Explain double helical structure of DNA
Q.7.(A)	Define receptors ? How they are classified ?
(B)	Discuss renewable resources in an ecosystem
Q.8.(A)	Write a note on fruit set and fruit ripening
(B)	Describe the sex chromosomes of Drosophila, man and grass hopper
Q.9.(A)	Describe Haemmerling experiment to introduce the role of nucleus in development
(B)	Explain endosymbiont hypothesis for evolution from prokaryotes to eukaryotes