

Objective  
Paper Code  
**8467**

FSD

Intermediate Part Second  
**BIOLOGY (Objective) GROUP - I**  
Time: 20 Minutes Marks: 17

Roll No. : \_\_\_\_\_



Q.No.1 You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	DNA polymerase enzyme which plays a supporting role in DNA replication is:	Polymerase II	Polymerase I	Polymerase III	Polymerase IV
2	The S-phase of cell cycle takes:	9 hours	4.5 hours	1.30 hours	10 hours
3	Pairing of homologous chromosomes called synapsis starts during:	Leptotene	Zygotene	Pachytene	Diakinesis
4	A person having neither antigen A nor B would have blood group:	O	A	B	AB
5	Organisms that have a foreign gene inserted into them are called:	Transduct	Transform	Transgenic organism	Bioreactors
6	Archaeobacteria tolerate temperature up to:	10°C	40°C	120°C	140°C
7	Lithosphere includes:	Air	Water	Gases	Earth, soil
8	In grassland ecosystem, tropical climates have woody trees called:	Savanna	Pampas	Prairies	Alpine
9	The cause of acid rain is:	Oxides of hydrogen	NO <sub>2</sub> and SO <sub>2</sub>	Oxides of potassium	Oxides of magnesium
10	Removal of salts with water from sweat glands and of sebum seems to be:	Excretory	Protective	Thermo-regulation	Both B & C
11	Kidneys receive what amount of blood supplied with each cardiac beat:	10 %	20 %	1 %	25 %
12	Long tubular structures join end to end to form long water conducting pipes in xylem are known as:	Fibers	Vessels	Sclereids	Trachea
13	Tropomyosin is a complex of how many polypeptide chains?	Single	Double	Triple	None
14	The receptors which have undifferentiated endings and produce sensation of pain are called:	Chemo-receptors	Nociceptors	Mechano-receptors	Thermo-receptors
15	Which is a haploid cell?	Spermatogonia	Primary spermatocyte	Secondary spermatocyte	Germinal epithelium
16	The final size of a given type of a cell is attained during:	Maturation	Differentiation	Growth	Elongation
17	The peripheral part of the blastoderm where the cells lie unseparated from the yolk is called:	Hypoblast	Epiblast	Area pellucida	Area opaca

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Intermediate Part Second **F00-41-21** Roll No. \_\_\_\_\_  
**BIOLOGY (Subjective) GROUP - I**  
Time: 02:40 Hours Marks: 68

**SECTION - I**

2. Write short answers to any EIGHT parts.

- (i) Define anhydrobiosis with an example.
- (ii) What is glomerular filtrate?
- (iii) What is pyrexia?
- (iv) What is a ligament?
- (v) Differentiate between hyaline cartilage and elastic cartilage.
- (vi) How many ribs do not attach with the sternum?
- (vii) What is after birth?
- (viii) Define climacteric.
- (ix) What is the productivity of grassland ecosystem?
- (x) What are zooplankton? Give example.
- (xi) Define eutrophication.
- (xii) Give importance of forests.

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3. Write short answers to any EIGHT parts.

- (i) Compare nerve impulse with saltatory impulse.
- (ii) What is cerebrospinal fluid? Give its function.
- (iii) What is acetylcholine? Give its role.
- (iv) Differentiate between alleles and multiple alleles.
- (v) What is universal blood donor?
- (vi) What are opsins?
- (vii) Give difference between ex-vivo and in-vivo gene therapy.
- (viii) How hypercholesterolemia can be cured by gene therapy?
- (ix) How cancer patients are being treated by gene therapy?
- (x) Define biosphere.
- (xi) Differentiate between habitat and ecological niche.
- (xii) Define food chain. Give example.

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4. Write short answers to any SIX parts.

- (i) Compare morula and blastula.
- (ii) How does coelom develop in chick embryo?
- (iii) Compare heterochromatin and euchromatin.
- (iv) Define transformation.
- (v) Differentiate between template and coding strand of DNA.
- (vi) Calculate the length of human cell cycle.
- (vii) Compare kinetochore microtubules and polar microtubules.
- (viii) How does molecular biology provide an evidence for evolution? Give at least one example.
- (ix) Can migration affect the genotype frequency? If yes, how?

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**SECTION - II**

Attempt any THREE questions. Each question carries 08 marks.

5. (a) How osmoregulation occurs in fresh water and terrestrial environment?  
(b) Describe symbiosis and mutualism. 04
6. (a) Write the process of ecdysis in arthropods.  
(b) Explain process of translation. 04
7. (a) What are receptors? Write names and functions of any four receptors  
(b) What is greenhouse effect? 04
8. (a) Give an account of sexually transmitted diseases in man.  
(b) Write note on mother-foetal Rh incompatibility. 04
9. (a) Discuss the Notochord and Mesoderm formation in chick embryo.  
(b) Describe the evidences of evolution from comparative anatomy. 04

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Objective  
Paper Code  
8466

Intermediate Part Second **F30-42-21**  
**BIOLOGY (Objective) GROUP - II**  
Time: 20 Minutes Marks: 17

Roll No. : \_\_\_\_\_



Q.No.1 You have four choices for each objective type question as A, B, C and D. The choice which you think is correct fill the relevant circle in front of that question number on computerized answer sheet. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero marks in that question. Attempt as many questions as given in objective type question paper and leave other circles blank.

S.#	Questions	A	B	C	D
1	Environmental factors causing abnormal development are called:	Toxins	Carcinogens	Teratogens	Mutagens
2	A group of cells that is capable of division is known as:	Meristem	Primordium	Zone of cell division	Zone of cell elongation
3	Parthenocarpy is artificially induced for commercial purpose by adding:	Ethene	Abscisic acid	Cytokinins	Auxins
4	The earliest form of muscles to evolve was:	Smooth muscles	Cardiac muscles	Skeletal muscles	Voluntary muscles
5	Secondary walls of sclerenchyma cells are impregnated with:	Cutin	Suberin	Pectin	Lignin
6	A group of diseases in which bone resorption out paces bone deposit is known as:	Osteoporosis	Osteoarthritis	Osteomalacia	Arthritis
7	Nitrogen of amino acids is converted into urea by:	Kidney	Liver	Spleen	Pancreas
8	Humming bird is included in:	Ectotherms	Endotherms	Heterotherms	Poikilotherms
9	Which is green house gas:	Oxygen	Nitrogen	Hydrogen	Carbon dioxide
10	Northern coniferous forests are called:	Taiga	Savanna	Prairies	Tundra
11	The process in which micro-organism use proteins and release ammonia or ammonium ion is called:	Nitrification	Denitrification	Ammonification	Assimilation
12	A group of bacteria that tolerate temperature up to 120°C are called:	Cyanobacteria	Eubacteria	Archaeobacteria	Mycoplasma
13	A gene is synthesized in laboratory from mRNA using:	Reverse transcriptase	DNA polymerase	Transcriptase	RNA polymerase
14	In a dihybrid cross the probability of plant with wrinkled and yellow seeds in F <sub>2</sub> is:	$\frac{1}{16}$	$\frac{3}{16}$	$\frac{9}{16}$	$\frac{16}{16}$
15	The spread of tumor cell and establishment of secondary areas of growth is called:	Metamorphosis	Cytostasis	Epistasis	Metastasis
16	The microtubules of spindle are composed of protein:	Actin	Myosin	Globulin	Tubulin
17	Synthesis of mRNA copy from DNA template is called:	Transcription	Translation	Transduction	Transformation

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## SECTION - I

2. Write short answers to any EIGHT parts.

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- (i) Define excretophore and anhydrobiosis.
- (ii) Define panting with an example.
- (iii) Compare osmoregulation in marine fishes and fresh water fishes.
- (iv) Define moulting. Give the hormone involved.
- (v) Give the structural composition of synovial joint.
- (vi) What is osteomalacia and cleft palate?
- (vii) Give the mechanism of invitro fertilization.
- (viii) Define parthenocarpy and seed dormancy.
- (ix) Give the layering feature of grassland.
- (x) Write scientific names of any two animals of temperate deciduous forest.
- (xi) Define greenhouse effect. Give its causes.
- (xii) Define deforestation and afforestation.

3. Write short answers to any EIGHT parts.

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- (i) Write any four junctions of cytokinins.
- (ii) Differentiate between photoreceptors and thermoreceptors.
- (iii) Write a note on Parkinson's disease.
- (iv) Differentiate between genotype and phenotype.
- (v) What do you understand by independent assortment of alleles?
- (vi) Write a note on codominance.
- (vii) What are palindromic sequences?
- (viii) What is a nectar in biotechnology? Give its role.
- (ix) What is gene pharming?
- (x) Differentiate between ecosystem and biosphere.
- (xi) Define food chain and food web.
- (xii) What is denitrification?

4. Write short answers to any SIX parts.

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- (i) Differentiate between primary and secondary growth.
- (ii) Define teratology.
- (iii) Write the function of DNA polymerase III.
- (iv) What is meant by karyotype?
- (v) Give the structure of typical nucleotide.
- (vi) Differentiate between benign tumor and malignant tumor.
- (vii) What is tetrad?
- (viii) State theory of special creation.
- (ix) What are vestigial organs?

## SECTION - II Attempt any THREE questions. Each question carries 08 marks.

5. (a) Write a note on adaptations in plants to low and high temperature. 04
- (b) What is predation? Write significance of predation. 04
6. (a) What are turgor movements? Describe their types. 04
- (b) Describe the replication process of DNA. 04
7. (a) What are neurons? Explain their different types with the help of diagrams. 04
- (b) Describe acid rains. Describe their adverse effects. 04
8. (a) Write a note on test tube babies and identical twins. 04
- (b) Describe and explain multiple alleles with the help of example. 04
9. (a) Discuss any four factors affecting gene frequency. 04
- (b) Write a note on regeneration. 04