



## Biology (Objective Type)

Time: 20 Minutes

Marks: 17

NOTE: Write answers to the questions on the objective answer sheet provided. Four possible answers

A, B, C and D to each question are given. Which answer you consider correct, fill the corresponding circle A, B, C or D given in front of each question with Marker or pen ink on the answer sheet provided.

- 1.1. The leaves with very small surface area, are found in:
 

(A) Hydrophytes	(B) Mesophytes	(C) Xerophytes	(D) Sciophytes
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2. The compound which take part in urea cycle is:
 

(A) Adenine	(B) Guanine	(C) Citrulline	(D) Thymine
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3. Osteomalacia includes a number of disorders in which bones receive inadequate:
 

(A) Water	(B) Oxygen	(C) Blood	(D) Minerals
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4. Each A-band has a lighter stripe in its mid section called:
 

(A) A-Zone	(B) H-Zone	(C) M-Line	(D) Z-Line
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5. The receptor cells of planaria are sensitive to:
 

(A) Light and pressure	(B) Light, pressure and touch	(C) Touch pressure and chemicals	(D) Light, pressure, touch and chemicals
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6. In nature  $P_{730}$  to  $P_{680}$  Conversion occurs in:
 

(A) Dark	(B) Light	(C) Morning	(D) Evening
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7. Lutenizing hormone in human female induces:
 

(A) Menstruation	(B) Menopause	(C) Oogenesis	(D) Ovulation
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8. The branch of biology which deals with the study of abnormal development is:
 

(A) Morphology	(B) Embryology	(C) Teratology	(D) Peratology
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9. The genetic code for glycine is:
 

(A) UAG	(B) GAU	(C) GUA	(D) GGU
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10. In turner syndrome the affected person have set of chromosomes:
 

(A) XO	(B) XXY	(C) XYY	(D) XXO
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11. The leptotene and zygotene lasts for:
 

(A) few hours	(B) few days	(C) few weeks	(D) few years
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12. The maturity on set diabetes of the young is:
 

(A) An autosomal recessive trait	(B) An autosomal dominant trait	(C) A sex linked trait	(D) A sex influenced trait
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13. The organisms used as biofilters is:
 

(A) Transgenic plant	(B) Transgenic animal	(C) Transgenic bacteria	(D) Transgenic virus
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14. The floral parts of a flowering plant are:
 

(A) Homologous	(B) Analogous	(C) Similar	(D) Different
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15. Mutualism is a type of:
 

(A) Symbiosis	(B) Commensalism	(C) Parasitism	(D) Predation
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16. The average rainfall in temperate deciduous forest is between:
 

(A) 700-2500 m.m	(B) 700-800 m.m	(C) 700-1000 m.m	(D) 700-1500 m.m
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17. The two main causes of air pollution are industrialization and:
 

(A) Automobiles	(B) Urbanization	(C) Deforestation	(D) Overgrazing
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**Biology** (Essay Type)

Time: 2:40 Hours

**Section - I**

Marks: 68

2. Write short answers of any eight parts from the following.

2x8=16

- i. Differentiate between pyrexia and pyrogens.
- ii. What are behavioural adaptations to regulate heat exchange between animals and environment?
- iii. What are excretophores? Give an example.
- iv. Define turgor pressure. Give its two functions.
- v. What are collenchyma cells? Discuss.
- vi. Define nastic movement. What is Themonasty?
- vii. Differentiate between Menstrual cycle and Oestrous cycle.
- viii. What are test tube babies? Discuss.
- ix. Differentiate between climate and weather.
- x. Discuss productivity of aquatic ecosystem.
- xi. Differentiate between herbicides and fungicides.
- xii. What is the Ozone layer depletion?

3. Write short answers of any eight parts from the following.

2x8=16

- i. Write commercial application of cytokinins.
- ii. What are the functions of oxytocin hormones?
- iii. Give the role of insuline and glucagon.
- iv. Define linkage and give its one disadvantage.
- v. What do you know about gene and locus?
- vi. Define Law of segregation.
- vii. Write down the treatment of cancer through gene therapy.
- viii. What are bioreactors?
- ix. Write two uses of PCR.
- x. What are root nodules? Give their importance.
- xi. Compare population and community and give their example.
- xii. Define ammonification and assimilation.

4. Write short answers of any six parts from the following.

2x6=12

- i. How aging can be slowed down?
- ii. What are metabolic defects? Give one example.
- iii. Give the role of mRNA and tRNA in translation.
- iv. How do histone and DNA interact with each other in nucleosome.
- v. Give two limitations of DNA polymerase III in DNA replication.
- vi. How does cell death help in development of multicellular organism.
- vii. What happens during diplotene stage.
- viii. Define genetic drift and give its effect.
- ix. Write down the measures for the preservation of endangered species.

**Section - II**

NOTE: Answer any three questions from the following.

8x3=24

5. (a) Describe the structure and function of Nephron.
- (b) Compare food chain with food web.
6. (a) Discuss the mechanism of repair of broken bones.
- (b) How did meselson and Stahl show that DNA replication is semiconservative.
7. (a) Describe any four functions of Gibberellins.
- (b) Define pollution. Write a note on Air or Atmospheric pollution.
8. (a) Compare sexual reproduction with asexual reproduction.
- (b) Describe the process of sex determination in plants and yeast.
9. (a) Write a note on the development of chick upto gastrulation stage.
- (b) Discuss natural selection and artificial selection.

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