

Roll No. _____ (to be filled in by the candidate)

(For all sessions)

Biology (Essay Type)

Time: 2:40 Hours

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Section - I

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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 Thermonasty?
- 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 insulin 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.