Special Instructions :-
1. You must write question paper series in the circle at top left side of title page of your Answer-book.
2. While answering your question, you must indicate on your answer book same question No. as appears in your question paper.
4. All the questions are compulsory and are divided into four sections.
5. Answers should be to the point.
6. Que No. 1 to 5 (Section-A) are of one mark each and are of MCQ type.
7. Que No. 6 to 15 (Section-B) are of 1½ marks each. Answer each of them in 30-40 words.
8. Que No. 16 to 23 (Section-C) are of 2½ marks each. Answer each of them in about 80 words.
9. Que No. 24 & 25 (Section-C) are of 3 marks each. Answer each of them in about 120 words.
10. Que No. 26 (Section-D) is of 4 marks. Answer in about 140 words.
11. Que No. 27 & 28 are of 5 marks each. Answer in about 150-170 words.
12. Draw diagrams wherever necessary.

Section-A

Q1. Cllistogamous flower are
   (a) Male flower which never opens
   (b) female flower which never opens
   (c) Bisexual flower which never opens
   (d) Open bisexual flower which perform self pollination in bud condition.  

Q2. An 'O' blood group child can not have parents of blood group
   (a) B and B  
   (b) A and B  
   (c) O and O  
   (d) AB and O 

Q3. Single cell protein (SCP) represents
   (a) Protein extracted from a micro-organism
   (b) Protein from a clone of cells
   (c) Protein mass from single cell animal
   (d) Biomass from growth of a micro-organism

(26)
Q4. Addition of foreign gene into a crop is (a) Genetic Engineering (b) Biotechnology (c) Tissue culture (d) Immunisation (1)

Q5. Pyramid of number deals with (a) Species in an area (b) Individuals in a Community (c) Individual in a trophic level (d) Sub species in a Community (1)

Section-B

Q6. What is Colostrum? What are its main functions? OR What are Leydig cells? What is their function? (1½)

Q7. How is a sickle cell carrier at an advantage over the rest of human population in a malaria ridden area? (1½)

Q8. What are transgenic bacteria? Illustrate using one example. OR Explain principle and function of ELISA. (1½)

Q9. Briefly describe Predator food chain. (1½)

Q10. Define: (a) Dominant trait (b) Recessive trait (c) Homozygous OR Write one function of each. (a) Promotor gene (b) t RNA (c) Exons (1½)

Q11. What is triple fusion? What is its significance? (1½)

Q12. Microbes can be used to decrease the use of chemical fertilizer and pesticides? Explain how this can be accomplished? (1½)

Q13. Define the following terms: (a) Biopatent (b) Biopiracy (c) Genetically modified food (1½)

Q14. Outline salient features of Carbon Cycle in nature. (1½)

Q15. What is gene therapy? (1½)
Section-C

Q16. What is aminocentesis ? What is its significance ?  

Q17. What are Homologous organs ? Explain with examples.  

Q18. What are biofertilizer, explain ?  

Q19. Define : (a) Scavenging  
(b) Commensalism  
(c) Symbiosis  
(d) Predation  
(e) Proto co-operation  

OR

Write one example for each of the following :  
(a) Heliophyte  
(b) Viviparous plant  
(c) Edothermic animals  
(d) Ectothermic animals  
(e) Sciophyle  

Q20. What is biotechnology ? How does old biotechnology differs from modern biotechnology ?  


OR

Write the application of Recombinant DNA technology.  

Q22. Differentiate between spermatogenesis and oogenesis.  

Q23. Describe hot spots of biodiversity with species reference to India.  

Q24. Describe an inducible operon with example and differentiate from repressible operon.  

Q25. What do you understand by acid rain ? What are its effects on the vegetation ?  

Section-D

Q26. What is Atavisim also write the name of atleast four vestigeal organ present in human body.  

OR

Describe Darwin Theory of 'Natural Selection'.  

Q27. (a) Write expanded forms of :  
(1) AMIS  
(2) CMIS  
(3) NACO  
(b) List any four danger signals of Cancer.  

OR

(28)
(a) Name and explain briefly any three types of Cancer.
(b) Differentiate between antibodies and interferons.

Q28. (a) Recapitulation theory was proposed by
(1) Van Bear    (2) Darwin
(3) Haeckel    (4) Aristotle
(b) Draw labelled L.S. of angiospermic ovule.
(c) What are Cry Protein? Name the organism that produces them.