C 21604 (Pages : 2) Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE (SUPPLEMENTARY/IMPROVEMENT) EXAMINATION, MARCH 2017

(UG-CCSS)

Botany

BO 6B 10 – CELL BIOLOGY, GENETICS AND PLANT BREEDING

(2012 Admission onwards)

Time : Three Hours Maximum : 30 Weightage

Illustrate wherever necessary.

Part A

Answer **all** *questions.*

Choose the correct answer :

1. 80 s ribosomes are present in :
   (a) Bacteria. (b) Mycoplasma.
   (c) Prokaryotes. (d) Eukaryotes.
2. Proteins associated with nucleosomes of chromosomes are :
   (a) Histones. (b) Non-histones.
   (c) Methionine. (d) Tyrosine.
3. Dihybrid F2 ratio is :
   (a) 3 : 1. (b) 9 : 3 : 3 : 1.
   (c) 1 : 1 : 1 : 1. (d) 1 : 2 : 1.
4. Which one of the following is developed through mutation?
   (a) Sharbati Sonora. (b) TR-8.
   (c) Ganga. (d) None of the above.

Fill in the blanks :

5. Fluid mosaic model was proposed by _____.
6. Self sterility in Nicotiana is an example for _____.
7. Genes located in the non-homologous portion of the Y chromosomes are _____.
8. IARI is located at _____.

Turn over

Answer in one word :

9. The process of digestion of various cell organelles of the cell :
10. A cross between F1 hybrid with one of the parent :
11. The site of crossing over whereby two homologous chromosomes are attached with one :
12. The phenomenon of superiority of the hybrid over both the parents.

(12 × ¼ = 3 weightage)

Part B

II. Short Answer Questions. Answer *all* questions :

13. List out the changes taking place during mitotic prophase.
14. Differentiate between euchromatin and heterochromatin.
15. Comment on capping of mRNA.
16. What is an operon? Give one example.
17. What is the role of Reverse transcriptase?
18. What is a test cross? How does it differ from back cross?
19. What is co-dominance? Give an example.
20. Differentiate between transition and transversion.
21. What is inbreeding depression?

(9 × 1 = 9 weightage)

Part C

III. Paragraph Questions. Answer any *five* questions :

22. Write an account on lysosomes and its function.
23. Describe Hershey and Chase experiment to prove that DNA is the genetic material.
24. Explain recessive epistasis with an example.
25. Describe Messelson and Stahl's experiment. What was their conclusion?
26. Explain Two point test cross.
27. Describe extra-nuclear inheritance with an example.
28. Write an account on polyploidy breeding.

(5 × 2 = 10 weightage)

Part D

IV. Essay Questions. Answer any *two* questions :

29. Describe Mitosis. Add a note on its significance.
30. Give an example for an inducible operon. Illustrate its regulation.
31. Give an account of structural aberrations of chromosomes. Add a note on its significance.

(2 × 4 = 8 weightage)