

C 1259

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Name.....

Reg. No.....

**SIXTH SEMESTER (CUCBCSS—UG) DEGREE EXAMINATION
MARCH 2021**

Microbiology

MBG 6B 10—GENETICS AND GENETIC ENGINEERING

(2018 Admissions)

Time : Three Hours

Maximum : 80 Marks

Draw diagrams wherever necessary.

Section A

Answer all questions.

Each question carries 1 mark.

1. The process of transmission of characters from one generation to next is called _____.
2. The region of DNA that encodes a single polypeptide is called as _____.
3. The crossing of F1 hybrid with its recessive parent is called _____.
4. The synapsis is initiated during _____ stage of meiosis.
(Leptotene, Pachytene, Zygotene, Diakinesis)
5. The number of linkage groups present in human male is _____.
6. The bacteriophage mediated gene transfer mechanism occurring in prokaryotes is _____.
7. The growth results from an increase in cell mass is called _____.
8. Name one detergent used for cell disruption.
9. Modified BAC vector containing λ -phage cos site is _____.
10. Golden rice is rich for _____.
11. In blue-white screening of recombinants the substrate used is _____.
(ONPG, X-gal, Lactose, β -mercaptoethanol)
12. The bacterial species widely used for developing transgenic plants is _____.

(12 \times 1 = 12 marks)

Turn over

Section B

Answer at least eight questions.

Each question carries 3 marks.

All questions can be attended.

Overall Ceiling 24.

13. Mendelian dihybrid phenotypic ratio.
14. Aneuploidy.
15. Competence factor.
16. Rolling circle replication.
17. Synaptonemal complex.
18. G_0 arrest.
19. Solid shear technique.
20. DNA ligase.
21. OriC region.
22. Shuttle vectors.

(8 × 3 = 24 marks)

Section C

Answer at least five questions.

Each question carries 6 marks.

All questions can be attended.

Overall Ceiling 30.

23. Multiple alleles.
24. Chromosomal mapping.
25. Apoptosis.
26. Cloning vectors.
27. Western blotting.
28. Pedigree analysis.
29. Regulation of cell cycle.
30. GM foods.

(5 × 6 = 30 marks)

Section D

Answer at least one questions.

The question carries 14 mark.

31. Explain Mendel's laws of inheritance with the help of monohybrid and dihybrid cross experiments.
32. Describe the various methods used for DNA sequencing.
33. Discuss different stages of meiotic cell division.

(1 × 14 = 14 marks)