

B. SC. DEGREE (C.B.C.S.S) EXAMINATION, OCTOBER 2018
(2016 Admission Regular & 2015 Admission Supplementary)
SEMESTER V - CORE COURSE (BOTANY)
BO5B06TB - CELL BIOLOGY AND GENETICS

Time : 3 Hours

Maximum Marks : 60

Part A**I. Answer all questions. Each question carries 1 marks (5x1=5)**

1. Which cell organelle has continuous connection with nuclear membrane?
2. What is a puff in a polytene chromosome?
3. Define central dogma
4. Define Epistasis
5. What is called holandric inheritance?

Part B**II. Answer any Five questions. Each question carries 2 marks (5x2=10)**

6. Write a brief note on nucleus.
7. Write a short note on polytene chromosome.
8. Differentiate between spontaneous and induced mutations
9. Which DNA double helix do you think would be harder to separate into two strands: DNA composed predominantly of AT base pairs, or of GC base pairs? Why?
10. The DNA double helix looks like a twisted ladder. What makes up each rung of the ladder? What holds the rungs together at the sides?
11. Define Mendel's law of inheritance
12. What are the causes and symptoms of Turner's syndrome
13. Write a short note on cytoplasmic male sterility in plants.

Part C**III. Answer any Five questions. Each question carries 5 marks (5x5=25)**

14. What are ribosomes? Describe its structure and functions.
15. Name the four steps of mitosis and briefly describe what happens in each step.
16. Describe briefly the structural aberrations of chromosomes.
17. How does transcription occur in prokaryotes?
18. Discuss the enzymes and proteins involved in DNA replication
19. Describe the mode of inheritance of comb pattern in fowls with an example.
20. What is a dihybrid cross? Elucidate it with an example.
21. Brief note on any two sex chromosomal abnormalities in man

Part D**IV. Answer any Two questions. Each question carries 10 marks (2x10=20)**

22. Compare and contrast mitosis and meiosis
23. What is an operon? Describe with illustrations, the lac operon in E. coli.
24. Give a detailed description on the different types of RNA and its function
25. Give a general account on the extra nuclear inheritance in plants.