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(21216)

Roll No.

M. Sc. (Biotech.)-I Sem.

NP-3331

M. Sc. (Biotechnology) Examination, Dec. 2016

CYTOGENETICS & MOLECULAR GENETICS

[H-102(M. Sc. Biotech.)]

Time : Three Hours]

[Maximum Marks : 50

Note : Attempt questions from all Sections as per instructions.

Section-A

(Very Short Answer Questions)

Answer all the *five* questions. Each question carries 2 marks. Very short answer is required not exceeding 75 words. $2 \times 5 = 10$

1. Comment upon colinearity between gene and protein.

(2)

2. Write a short note on satellite DNA.
3. Write short note on unwinding proteins.
4. Write a short note on RL model of DNA by Sasisekharan.
5. Comment upon 'inversion act as cross-over suppressor'.

Section-B

(Short Answer Questions)

Answer any *two* questions out of the following three questions. Each question carries 5 marks. Short answer is required not exceeding 200 words. $5 \times 2 = 10$

6. Write a detailed note on double reduction.
7. Write a detailed note on synaptonemal complex.
8. Comment upon C-value paradox.

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Section-C

(Detailed Answer Questions)

Answer any *three* questions out of the following five questions. Each question carries 10 marks. Answer is required in detail. $10 \times 3 = 30$

9. What is reduction division ? With the help of suitable diagrams, discuss the substages of a prophase-I.
10. What do you understand by reciprocal translocation ? Discuss the orientation and breeding behaviour of a translocation heterozygote. <https://www.ccsustudy.com>
11. Describe in detail the two experiments demonstrating that DNA is the genetic material.
12. What is DNA replication ? Describe in detail the two experiments demonstrating semi-conservative mode of DNA replication.

13. How will you distinguish cytologically :

- (a) Between a paracentric inversion and a pericentric inversion
- (b) Between a translocation homozygote and a translocation heterozygote ?

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