

Question Paper

Exam Date & Time: 20-Apr-2018 (09:30 AM - 12:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

INTERNATIONAL CENTRE FOR APPLIED SCIENCES FOURTH SEMESTER B.S. (ENGG)

END-SEMESTER THEORY EXAMINATIONS APRIL - 2018

DATE: 20 APRIL 2018

TIME: 9:30AM TO 12:30PM

Cell And Molecular Biology [BT 242]

Marks: 100

Duration: 180 mins.

Answer 5 out of 8 questions.

Missing data, if any, may be suitably assumed

- 1) How does cohesins and condensins bring about chromosome condensation? (10)
 - A)
 - B) Elaborate on the various phases in a cell cycle? (10)
- 2) Describe the Griffith experiment. What was the reason for the rough strain getting transformed to a smooth strain? (10)
 - A)
 - B) Give a description on the structural features of B form of DNA. (10)
- 3) Explain any two post-translational modifications in eukaryotes. (10)
 - A)
 - B) What is meant by non-disjunction and what could be its consequences? (10)
- 4) How does protein synthesis in prokaryotes differ from that in eukaryotes? (10)
 - A)
 - B) How did Messelson and Stahl prove that DNA replicates by semi-conservative model? (10)
- 5) How does F⁺ conjugation take place in bacteria? (10)
 - A)
 - B) Discuss the functions of (10)
 - a) Golgi bodies and
 - b) Endoplasmic reticulum.
- 6) How are histones organized in nucleosome? (10)
 - A)

- B) How does DNA replication take place by semi-discontinuous mode? (10)
- 7) Explain why a codon consists of 3 nucleotides. (10)
- A)
- B) How does telomerase solve the end-replication problem of linear chromosomes? (10)
- 8) Elaborate on the various features of lac operon. (10)
- A)
- B) Elaborate on the mechanism of Nucleotide Excision Repair. (10)

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