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1605E606

Candidate's Seat No :

M.Phil. Science Examination

Paper-III : Biochemistry

May-2017

Time : 3 Hours] **[Max. Marks : 70**

Instructions: All questions carry equal marks
All questions are compulsory.
Illustrate your answers with neat diagrams wherever necessary

1. [14]

(A) Discuss molecular composition of Chromosome Replication in Eukaryotes. Add its significance.

OR

(A) Explain the Initiation, Regulation and Termination of DNA synthesis in Eukaryotes.

(B) Explain the DNA damage and its correction through any repair mechanism.

OR

(B) Explain the mechanism of Nucleotide excision repair.

2. [14]

(A) Discuss the enzymes and vectors involved in Recombinant DNA Technology.

OR

(A) Discuss the Techniques of Isolation and purification of DNA from plant cells.

(B) Explain the types of Cloning vectors and their importance.

OR

(B) Write notes on "Human Genome Project" and its limitations.

3. [14]

(A) Explain the mechanism of Mutagenesis. Add its implications on cell process.

OR

(A) Discuss C-DNA libraries and its importance in molecular studies.

(B) Explain the various types of PCR technique and emphasize the Real Time PCR with its importance.

OR

(B) Discuss Principle, Technique and applications of Microarray based techniques.

4. [14]

(A) Explain the Bioremediation and its significance in oil containing waste management.

OR

(A) Discuss the overview of Isolation and characterization of microorganisms from oil containing soil.

(B) Discuss the Techniques for the isolation and characterization of Circulating Tumour cells.

OR

(B) Explain the Cell Search methodology for the isolation of CTCs from whole blood.

5. [14]

(A) Discuss the role of Neutrophils in the tumour inflammation and immunology.

OR

(A) Discuss the Diagnostic testing methods for ALK functions in NSCLC.

(B) Explain the technique of 16S r-RNA Sequencing especially from Bacterial isolates.

OR

(B) Discuss the metabolic pathway of aerobic degradation of Hydrocarbons by microorganisms.