2005E762

Candidate's Seat No :

M.Sc. (Sem.-III) Examination
504 EC Life Science
May-2017

LSC 504EC (Elective: Molecular Biology and Animal Biotechnology)

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

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

1. Answer **Any Two:** [14]

(A) Explain the Nucleosome and Solenoid Organization of Chromosome and role of Histones.
(B) Discuss the Nuclear organization and Chromatin Chemistry.
(C) Explain the Enzymology of Eukaryotic DNA Replication. Add its regulations.
(D) Discuss the DNA repair mechanism, elaborate any one.

2. Answer ***Any Two*:** [14]

(A) Explain selection strategy and techniques for isolation of industrially important microorganisms.
(B) Draw and explain the design of industrial reactor.
(C) What is Inoculum? Explain inoculum preparation for fungal fermentation.
(D) Describe various carbon sources used for preparation of fermentation media at industrial level.

3. Answer ***Any Two*:** [14]

(A) Discuss the techniques for cell dissociation & disaggregation for establishment of primary culture.
(B) Give an account on "Essential compositions of Animal Cell Culture media".
(C) Explain Protocol used to culture Animal cancer cells for anticancer therapy.
(D) Discuss the various methods used for the characterization of cells in culture.

4. Answer ***Any Two*** of the following [14]

(A) Explain the protocol for the culture of Specialized cells especially Haematopoietic Stem cells.
(B) Describe the Stem Cell Characteristics and their Banks.
(C) How many types of probes are used in Real time PCR? Explain each with a suitable example.
(D) Discuss in detail plasmids as cloning vectors

5. Answer ***very briefly*** only [14]

(A) How will you do replica plating?
(B) Reason for priming the DNA replication and semi discontinuous.
(C) Explain any two filtration approaches used for down-stream processing.
(D) Explain working and use of Baffles.
(E) What is FISH?
(F) What is antibiotic sensitivity marker?
(G) Define Mass Culture through micro-carrier cell culture, and its importance.