

SARDAR PATEL UNIVERSITY
T.Y.BSc 6TH SEMESTER EXAMINATION MARCH 2019

BIOCHEMISTRY: US06CBCH01

Title: MOLECULAR BIOLOGY -II

Date: 25/03/19; Monday Time: 10:00 AM TO 1:00 PM TOTAL MARKS: 70

Q.1 Select proper option from following MCQ.

[10]

1. Crucial remodeling of the chromatin facilitated by _____.
a) activators b) enzyme complex c) SWI d) ALL
2. Synthesis of _____ is an operon regulatory device.
a) Attenuators b) trp L c) Leader peptide d) all
3. CAP binding occurs when _____ concentrations are high.
a) Glucose b) Lactose c) C-AMP d) b and c both
4. _____ function as photoantenna?
a) MTHF poly Glu b) Photolyase c) FADH d) All
5. _____ enzyme recognizes many types of lesions including 6-4 photo products.
a) AP endonuclease b) ABC excinuclease
c) DNA Glycosylase d) All
6. The main chemical reaction of alkylating agents is alkylation at _____ position of guanine residues.
a) N-3 b) N-5 c) N-6 d) N-7
7. Density gradient centrifugation in the presence of _____ can be used to separate super coiled DNA from non-supercoiled molecules
a) EtBr b) SDS c) CTAB d) EDTA
8. _____ is not used in Maxam & Gilbert's gene sequencing method.
a) ddTTP b) piperidine c) DMSO d) polynucleotide kinase
9. _____ is not require for preparation of cDNA library
a) reverse transcriptase b) DNA polymerase
c) oligo (dt) primer d) dideoxy GTP
10. _____ vectors are routinely used to clone 600 kb fragments and special types are able to handle DNA upto 1400 kb in length
a) BAC b) YAC c) Ti d) cosmid

Q.2 Answer the following in short (Any ten)

[20]

1. What is function of CAP-CAMP complex.
2. What do you know about leader mRNA?
3. Write role of HATS?
4. Write name and function of two enzymes of direct repair.
5. What are AP sites? how it is produced?

(1)

(P.T.O.)

6. What is effect of acridine dyes in replication?
7. What is role of sucrose and triton x-100 for separation of plasmid DNA on basis of size.
8. What is episomes?
9. What do you know about plasmid amplification?
10. What is gene probes?
11. Write difference between ddATP and dATP?
12. What is use of nitrocellulose in electroblotting?

Q.3 Write short note on:

- a. Heterochromatin and euchromatin [5]
- b. Chromatin remodeling. [5]

OR

- a. Coactivators and basal transcription factors ? [5]
- b. Distinguish the regulation of gene expression in eukaryotes from that bacteria. [5]

Q.4 Explain the following:

- a. Classify chemical mutagens and explain effect of any one. [5]
- b. Write effect of EMS and EES. [5]

OR

Q.4 Explain the following:

- a. Intercalation resulting in insertion and deletion of base [5]
- b. Explain model for methyl directed mismatch repair [5]

Q.5 Explain in detail preparation of total cell DNA [10]

OR

Q.5 Explain in detail preparation of Plasmid DNA [10]

Q.6 Explain:

- a. Southern Blotting. [5]
- b. Western Blotting [5]

OR

Q.6 Explain:

- a. Chain termination method [5]
- b. Northern blotting. [5]

