

SEM	SET	PAPER CODE	TITLE OF THE PAPER
IV	2013	11UBO430208	CELL AND MOLECULAR BIOLOGY

SECTION – A**Answer all the questions:****20 x 1 = 20****Choose the correct answer:**

- The sandwich model for plasmamembrane was proposed by
 - Hober and Fricke
 - Danielli and Darson
 - Gorter and Grendel
 - Singer and Nicolson
- In prokaryotes the origin of DNA replication is in
 - multiple sites
 - continuous sites
 - single site
 - discontinuous sites
- The post-transcriptional modifications of mRNA occurs in
 - Nucleus
 - Chloroplast
 - Ribosomes
 - Endoplasmic reticulam
- The tRNA is a ribonucleic acid which transfers the activated aminoacids to
 - chloroplast
 - DNA
 - mitochondria
 - ribosomes
- A small molecule that triggers gene transcription by binding to a regulatory protein is known as
 - adoptor
 - repressor
 - inducer
 - intron

Fill in the blanks:

6. The cytoplasmic matrix is traversed by a complex network of inter connecting membrane called _____.
7. The biosynthesis of protein or a polypeptide chain in a living cell is called _____.
8. The process by which RNA molecules are initiated, elongated and terminated is known as _____.
9. Gene expression is the transfer of genetic information from _____ to _____ molecules and then from _____ to protein molecule.
10. The synthesis of particular gene product is controlled by a mechanism called _____.

State True or False:

11. Lysosomes containing intracellular proteases and non-hydrolytic enzymes.
12. In prokaryotes like *E.coli* all RNA synthesis is done by only one kind of RNA polymerase.
13. The term spliceosomes are used to represent the SnRNP association with hnRNA at the exon – intron junction.
14. The characteristics of prokaryotic and eukaryotic mRNA is similar.
15. The chemical product of a gene expression is a protein which may be an enzyme.

Answer in one or two sentences:

16. What are thylakoids?
17. What is mismatch repair of DNA?
18. What is meant by central dogma?
19. What are poly ribosomes?
20. Define the term gene expression.

SECTION – B

Answer all the questions:

5 x 4 = 20

21. a. Outline the major functions of a Nucleus.

OR

b. Bring down the structure of ribosomes.

22. a. Classify different types of mutations.

OR

b. Briefly explain the semi conservative method of DNA replication.

23. a. Mention the major types of RNA polymerases.

OR

b. Point out the term post transcriptional modifications.

24. a. Write short notes on mRNA.

OR

b. Comment on amino acyl synthetase.

25. a. Differentiate positive and negative gene regulation.

OR

b. List out the types of regulation of gene expression in Eucaryotes.

SECTION – C

Answer any FOUR questions:

4 x 15 = 60

26. Describe the Ultrastructure, chemical composition and functions of mitochondria.
27. Write notes on (a) Photoreactivation (b) Mutagenic agents
(c) SOS response
28. Give an account prokaryotic transcription mechanism with suitable example.
29. Define genetic code and add a detailed note on it's important characteristics.
30. What is lac operon? Explain the mechanism of lac operon model in *E.coli*.
