

D -2)696

(Pages 3)

Name.....

Reg. No.....

**FIFTH SEMESTER B.Sc. DEGREE EXAMINATION, OCTOBER 2012**

(C.C.S.S.)

BT 5B 01—CELL AND MOLECULAR BIOLOGY

Time : Three Hours

Maximum : 30 Weightage

I. Objective Type Questions. Answer *all* questions :

Choose the correct answer :

1 Genes are composed of nucleic acids called DNA was first discovered by :

- (a) James D. Watson. (b) Francis Crick.  
(c) Alexander Fleming. (d) Oswald T. Avery.

2 The ~~sphaerosomes~~ are associated with :

- (a) Synthesis and storage of metabolic gases.  
(b) Synthesis and storage of proteins.  
(c) Synthesis and storage of carbohydrates.  
(d) Synthesis and storage of lipids.

3 DNA is replicated and DNA content of the nucleus is doubled in the :

- (a) M Phase. (b) G<sub>1</sub> phase.  
(c) S phase. (d) G<sub>0</sub> phase.

4 In prokaryotes the ~~codon~~ AUG codes for :

- (a) ~~Formyl methionine.~~ (b) ~~Arginine.~~  
(c) ~~Glycine.~~ (d) ~~Serine.~~

5 The terminator ~~codons~~ are :

- (a) ~~UAG, UAA and UGA.~~ (b) ~~UGG, GAA and GUG.~~  
(c) ~~UUU, GAG and GAA.~~ (d) ~~GUU, UAG and GUA.~~

6 Which is true for Interferon ?

- (a) Stimulate wound healing. (b) Improves fertility.  
(c) Used in cancer treatment. (d) Used in treatment of haemophilic.

~~ribonucleases~~ are involved in producing mature ~~trNA~~ in *E.Coli* ?

- (a) ~~A,D,E,F.~~ (b) RNases D,E,F,H.  
(c) (d) RNases A,D,H,P.

**Turn over**

8 A multiple cloning site :

- (a) Contains many copies of a cloned gene.
- (b) allows the choice of different restriction enzymes for cloning.
- (c) allows the choice of different organism for cloning.
- (d) contains many copies of the same restriction enzyme site.

9 Bacterial lipopolysaccharide is characterized by :

- (a) Glycolipids.
- (b) Ketodeoxyoctulonate.
- (c) Phospholipids.
- (d) Ribitol teichoic acid.

Name the following :

10 A cell adhesion protein 440,000 daltons having numerous binding sites.

11 These transmembrane glycoproteins in the RER are involved in mediating ribosome binding.

12 This hypothesis postulates that polymerization, depolymerization of the microtubules is directly responsible for the movement of the chromosomes.

(12 x 'A = 3 weightage)

II. Short Answer type questions. Answer *all* nine questions :

13 Z model.

14 Topoisomerases.

15 Central dogma.

16 Ion channel mediated receptors.

17 Unit membrane model.

18 Reverse transcriptase.

19 Lysosomes.

20 Chromatin.

21 Karyotype.

(9 x 1 = 9 weightage)

III. Short essay or paragraph questions. Answer any *five* questions :

Write notes on the following :-

22 Retroposons.

23 hn RNA.

24 CAM plants.

25 Genetic code.

26 Griffith's experiment.

27 Peroxisomes.

28 The flagella.

(5 x 2 = 10 weightage)

IV. Essay questions. Answer any *two* out of three :

29 Give an account of g-protein linked receptors.

30 Discuss the organization of the plasma membrane and functions.

31 Write a brief account on post translational modifications.

(2 x 4 = 8 weightage)