AAR-003-006204 Seat No. _____

B. Sc. (Bio.-Info.) (Sem. II) (CBCS) Examination

April / May – 2016

B. Sc. BI - 204 : Cell & Molecular Biology

Faculty Code : 003
Subject Code : 006204

Time : **2.30** Hours] [Total Marks : **70**

Instruction : All questions are compulsory.

1 M.C.Q. 20

1. Apoptosis is
   (A) Programmed cell division
   (B) Programmed cell death
   (C) Programmed. cell cycle
   (D) Any of the above

2. Homosapiens sapiens having _____ pairs of chromosomes.
   (A) 23 (B) 24
   (C) 46 (D) 48

3. Transposons are also known as
   (A) Running genes (B) Steady genes
   (C) Squirreling genes (D) Jumping genes

4. Telocentric chromosome is :
   (A) Rod shaped (B) J shaped
   (C) L shape (D) V shaped

5. Centriole helps in producing
   (A) Centromere (B) Chromonema
   (C) Microtubules (D) DNA

6. Eukaryotic chromosome has _____ histones.
   (A) H1, H2A. H2B, H3 and H4
   (B) HIA, HIB, H2A, H2B
   (C) H3A, H3B, H1, H2
   (D) H4A, H4B, H3, H1, H2

7. Autophagy means
   (A) Killing
   (B) Lysosomes
   (C) Phagocytosis
   (D) Killing own cell

8. Glyoxysomes are not doing the following one function
   (A) Fatty acid metabolism
   (B) Beta Oxidation
   (C) Gluconeogenesis
   (D) Glycolysis

9. Most of the enzymes of Krebs cycle are present in_____ of Mitochondria.
   (A) Inter membrane space
   (B) Matrix
   (C) Inner membrane
   (D) Outer membrane

10. This is not a type of leucoplast
   (A) Amyloplast
   (B) Elaioplast
   (C) Rhodoplast
   (D) Proteinoplast.

11. Chloroplast
   (A) Has extra chromosomal DNA
   (B) Does not have extra chromosomal DNA
   (C) Sometimes such DNA is found
   (D) None of the above

12. _____ explains cell membrane structure.
   (A) Watson and Crick model
   (B) Fluid mosaic model
   (C) Solenoid model
   (D) None of the above

13. The following one of the statements is not true for glyoxisomes
   (A) They are found in animals
   (B) They are found in plants
   (C) They contain oxidases
   (D) They contain catalases

14. Sister chromatids are always _____.
(A) Similar to each other (B) Dissimilar to each other
(C) Either of (A) or (B) (D) None of the above

15. Sister chromatids are attached to each other at
(A) Centromere (B) Centriole
(C) Chromonema (D) Chromonemeta

16. DNA to Histone ratio is generally
(A) 4 : 1 (B) 1 : 4
(C) 1 : 1 (D) 0.6 : 1

17. The following is not the function of Mitochondria
(A) Energy production oduction
(B) Exergonic reaction
(C) ATP formation
(D) Photosynthesis

18. Interwoven innermembrane of Mitochondria is known as
(A) F1 particles (B) Matrix
(C) Enzyme (C) Cristea

19. Enzyme for digestion and break down of waste molecules are present in _____.
(A) Lysosome (B) ER
(C) Mitochondria (D) Plastids

20. The following is the function of Peroxisome.
(A) Protein metaboloism (B) H_2O_2 metabolism
(C) Photosynthesis (D) ATP production

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(A) Answer any three of the following : 2×3=6
(a) Enlist types of RNA
(b) What are plastids?
(c) Define phagocytosis.
(d) Define Operon.
(e) Write main steps of protein synthesis.
(f) Define cell division.

(B) Answer any three of the following : 3×3=9

(a) How damaged DNA is repaired?

(b) Enlist types of RNA with structure and function.

(c) Explain lac operon.

(d) Write a note on lampbrush chromosome.

(e) Give details of tRNA structure.

(f) What is genetic code?

(C) Answer any two of the following : 5×2=10

(a) Write details of Ribosomes.

(b) Translation in Eukaryotes.

(c) Explain cell theory in detail

(d) Write a note on cancer biology.

(e) Write details on Replication.

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(A) Answer any three of the following : 2×3=6

(a) Write functions of RE.

(b) Explain the phenomen of denaturation of DNA.

(c) What is post transcriptional modification?

(d) What is a leucoplast?

(e) Draw structure of nucleolus.

(f) What is scaffold?

(B) Answer any three of the following : 3×3=9

(a) Explain the ultrastructure and function of Ribosome.

(b) Why genetic code is triplet?

(c) Explain the tertiary structure of chromosome.

(d) Write a note on functions of Mitochondria.

(e) Write details of Chromosome structure.

(f) What the concept of central dogma wants to tell?

(C) Answer any two of the following : 5×2=10

(a) Transcription in Prokaryotes

(b) Write about meiosis.

(c) Explain the experiment which proves Semiconservative mode of DNA replication

(d) Transposable elements

(e) Write a note on cell-cell interactions.