



Register Number:

Date:

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE-27
B.Sc. ZOOLOGY - V SEMESTER
SEMESTER EXAMINATION: OCTOBER 2019
ZO 5115- CELL BIOLOGY, MOLECULAR BIOLOGY AND IMMUNOLOGY

Time- 2 ½ hrs

Max Marks-70

This paper contains two printed pages and three parts.
Draw diagrams wherever necessary

Part A

I. Answer the following questions.

1X15=15

- _____ is not membrane bound
a. Ribosomes b. Lysosomes c. Golgi complex d. Endoplasmic reticulum
- The only isotype of antibody to be passed from mother to fetus through placenta is _____
a. IgA b. IgM c. IgG d. IgE
- _____ separates the two strands of DNA during PCR
a. Helicase b. Exonucleas c. Endonuclease d. High temperature
- A chromosome may not have _____
a. Telomere b. Centromere c. Chromocenter d. Origin of replication
- Syngraft is a transplantation of organs from one individual to _____
a. Another individual of same species c. His/her monozygotic twin
b. Another individual of a different species d. Another site in his/her body
- Phase contrast microscope are most useful in observing _____
a. Histological sections b. Unstained living cells c. Viruses d. Structure of biomolecules
- The pH of lysosomes is _____ relative to the cytosol
a. Acidic b. Basic / alkaline c. Similar d. Changes according to the enzyme
- DNA replication takes place during _____ of the cell cycle
a. S-phase b. M-phase c. G1-phase d. Go – phase
- Monoclonal antibodies have _____ as compared to the polyclonal antibodies
a. Higher sensitivity b. Higher specificity c. Both a and b
d. Quicker reaction time

10. Degeneracy of codon means it is _____
- Universal
 - One amino acid is coded by more than one codon
 - One codon codes can code for more than one amino acid
 - All of the above
11. Higher _____ is not true for cancer cells
- Rate of cell division
 - Rate of apoptosis
 - Rate of chromosomal aberrations
 - Rate of glycolysis
12. In electron microscopy, the staining is with _____
- Colour dyes
 - Fluorescent dyes
 - Compounds of heavy metals
 - Luminescent dyes
13. HIV infection is not transmitted by _____
- Sexual contact
 - Blood transfusion
 - Parent to child transmission
 - Mosquito bite
14. _____ RNA has an acceptor arm
- mRNA
 - tRNA
 - rRNA
 - viral RNA
15. Which statement is true for puffs in polytene chromosomes
- Indicates areas of active Transcription
 - Position is fixed for a species
 - Indicates areas of active DNA synthesis
 - Indicates areas with more number of chromatin fibres

Part B

II. Answer any five questions.

5x5=25

- Write short notes on:
 - Fluid mosaic model
 - Facilitated diffusion
- Draw a neat labelled diagram of Watson and Crick model of DNA
- Explain numerical aberrations with suitable examples
- Differentiate between apoptosis and necrosis
- Write short notes on:
 - Immune suppressors
 - Anaphylactic shock
- List out the differences between the B and T lymphocytes.
- Mention the functions of mitochondria in a human cell.

Part C

III. Answer any three questions.

3X10=30

- Describe in detail the steps involved in DNA replication.
 - Describe the process of translation.
 - What are antibodies? Give an account of the different isotopes of antibodies.
 - Explain the various structural and metabolic changes of the cancer cells
 - What are banding techniques? Add a note on G, Q and R bandings.
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