647510 **BSCbioCC5030** **Seat No :_____**

B.Sc. Semester - 5 (*CBCS*) Examination
Oct/Nov. - 2022(Old Course)
BIOCHEMI., CYTOLOGY, INSTRU., BIOLOGY (CORE)

Time: 2:30 Hours **Marks: 70**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

QUE-1 (A) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) **[07]**

1. Give the classification of carbohydrates with suitable examples.
2. Give the classification and nomenclature of enzymes.

QUE-1 (B) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) **[04]**

1. Write a Short note on Glycolysis.
2. Write a Short note: Importance of Vitamins.

QUE-1 (C) ANSWERS THE FOLLOWING QUESTIONS. (ANY THREE OUT OF FIVE) **[03]**

1. Which class of carbohydrates which cannot be hydrolyzed further, is known as?
2. How many amino acid residues are there in per turn of α- helix?
3. What is the name of protein which is found in nail, hair and horns?
4. A ……. is a biocatalyst that increase the rate of the reaction without being changed.
5. What is Gluconeogenesis ?

QUE-2 (A) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) **[07]**

1. Describe phenomenon of mitosis in detail.
2. What is cancer? Give the types of cancers in detail.

QUE-2 (B) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) **[04]**

1. Describe phenomenon of prophase I of meiosis.
2. Write a short note: Microtubules

QUE-2 (C) ANSWERS THE FOLLOWING QUESTIONS. (ANY THREE OUT OF FIVE) **[03]**

1. …….is added to arrest cell division at metaphase stage.
2. Chromosome movement during cell division is regulated by…….
3. Which organelle disappears during prophase of mitosis?
4. Chromosomes arrange on……. During metaphase.
5. ……are cancers in which there is excessive production of lymphocytes by the lymph nodes and spleen.

QUE-3 (A) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) **[07]**

1. Give the principle, procedure and application of Gel electrophoresis.
2. Describe DNA recombinant technology in detail.

QUE-3 (B) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) **[04]**

1. Describe technique: Paper chromatography
2. Write a short note on bacteriophage as a vector

QUE-3 (C) ANSWERS THE FOLLOWING QUESTIONS. (ANY THREE OUT OF FIVE) **[03]**

1. An enzyme which synthesis DNA from RNA is called……
2. Name the bacterium from which Taq DNA polymerase derived?
3. Which technique separates charged particles using electric field?
4. In paper chromatography Rf value =
5. In recombinant DNA technology ……is used to cut pieces of DNA and ……..joins these segments to form recombinant DNA.

QUE-4 (A) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) [07]

1. Describe amniocentesis in detail.
2. Describe molecular structure of gene.

QUE-4 (B) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) [04]

1. Write a short note on colourblindness.
2. Describe deletion as a mutation.

QUE-4 (C) ANSWERS THE FOLLOWING QUESTIONS. (ANY THREE OUT OF FIVE) [03]

1. Pentose sugar + nitrogen base + phosphate =……..
2. In smallest unit of a gene whose mutation can produce a mutant phenotype is term as……..
3. In structure of DNA helix, both polynucleotide strands remain separated by……..distance.
4. Colorblindness and haemophilia are the best example of……..linked inheritance.
5. X- rays and gamma rays are……radiations.

QUE-5 (A) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) [07]

1. Describe DNA replication with suitable example.
2. Describe translation process in detail.

QUE-5 (B) ANSWERS THE FOLLOWING QUESTIONS. (ANY ONE OUT OF TWO) [04]

1. Write a short note – Transcription
2. Write a short note- Types of mode of replication

QUE-5 (C) ANSWERS THE FOLLOWING QUESTIONS. (ANY THREE OUT OF FIVE) [03]

1. What is the mode of replication in E. coli?
2. Give the function of ligase enzyme.
3. Which factor ensure stable binding of RNA polymerase at the promoter site?
4. AUG is considered as a …….condon.
5. Like replication, Transcription also occurs bidirectionally? (True or False)

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