17 AUG 2020

M.Sc. (Marine Bio) Sem-II : બોધ : Sub Code: 21683

૧. દરેક પ્રશ્નનો [a] અથવા [a(i)] અને [a(ii)] જ લખવાના રહેશે.
૨. પ્રશ્ન : ૧[a] અથવા ૧[a(i)] અને ૧[a(ii)] તથા ૨[a] અથવા ૨[a(i)] અને ૨[a(ii)] ના 14 માર્કસ ના બદલે ૧૮ માર્કસ રહેશે.
૩. પ્રશ્ન : ૩[a] અથવા ૩[a(i)] અને ૩[a(ii)] તથા ૪[a] અથવા ૪[a(i)] અને ૪[a(ii)] ના 14 માર્કસ ના બદલે ૧૬ માર્કસ રહેશે.
૪. દરેક પ્રશ્નનો પ્રશ્ન નં ૧(b), પ્રશ્ન નં ૨(b), પ્રશ્ન નં ૩(b) તથા પ્રશ્ન નં ૪(b) (ટુંકા પ્રશ્નો) વિદ્યાર્થીએ લખવાના નથી.

Instructions: Attempt all questions

Figure on right shows marks of the questions.

Q.1A Write a detailed note on telomerase activity of DNA replication. **14**

OR

Write notes on:

a. Comparison of DNA polymerase I, II and III
b. Explain the content of DNA structure with parallel and anti-parallel strand.

Q.1B Attempt any four out of following: **04**

i. Name the RNA molecules which are used to carry genetic information copied from DNA?
a) tRNA b) mRNA c) rRNA d) snRNA

ii. Name the secondary structure of tRNA?
a) Cloverleaf b) L-shaped c) Duplex d) Triple Helix

iii. In tRNA, what does the letter "t" stand for?
a) Transfer b) Thymine c) Translation d) Transcription

iv. What is the term for a 3-nucleotide sequence on tRNA that codes for an amino acid?
a) Active site b) Anticodon c) Codon d) Triple salchow

v. DNA strands run _____ in relation to each other.
a) antiparallel b) parallel c) perpendicular d) both a and b

vi. Between the two strands of a DNA segment the nitrogen bases are held together by _____.
a) covalent bonds b) hydrogen bonds c) ionic bonds d) metallic bonds

Q.2A Explain hybridization technique using Sourthern blotting method. **14**

OR

a. Explain Wobbles hypothesis.
b. Describe the structure of RNA polymerase.

Q.2B Attempt any four out of following: **04**

i. Which of the following RNA constitutes 90 percent of the total cellular RNA?
a) rRNA b) tRNA c) mRNA d) hnRNA

ii. The following codon codes for which of the amino acid respectively?
AUG
a) Phenylalanine b) Methionine c) Alanine d) Lysine

iii. Damage and errors in DNA cause_____

a) Mutation b) DNA repair c) Translation d) Transcription

iv. Which kind of mutation is caused by addition or deletion of bases?
a) Transversion b) Frameshift mutation c) Transition d) Transcription

v. Which of the following transcription termination technique has RNA dependent ATPase activity?
a) Intercalating agents b) Rho dependent c) Rho independent d) Rifampcin

vi. Translation takes place before transcription.
a) True b) False

Q.3A Explain in detail: β oxidation process with energetics. **14**

OR

a. Explain: C4 Cycle.
b. Explain: CAMP Pathway.

Q.3B Answer any three out of following: **03**

i. Oxidation of palmitic acid (C16) involves ___ rounds of b-oxidation and yields ___ molecules of acetyl-CoA.
a) 8, 8 b) 7, 8 c) 16, 8 d) 7, 7 e) 16, 7

ii. Which of the following are major sites for glycogen storage?
a) Adipose tissue b) Bones c) Muscle and liver d) Kidney and liver

iii. Peptide bond is a _____.
a) Covalent bond b) Ionic bond c) Metallic bond d) Hydrogen bond

iv. Unfolding of a protein can be termed as _____.
a) Renaturation b) Denaturation c) Oxidation d) Reduction

v. Which part of the amino acid gives it uniqueness?
a) Amino group b) Carboxyl group c) Side chain d) None

Q.4A Describe: Polygenic inheritance with suitable example. **14**

OR

Write short note on: a.) Lethal alleles b.) Gene interaction

Q.4B Answer any three out of following: **03**

i. What is Lethal gene?
ii. Define: Epistatic gene
iii. Define: Allelic gene interaction
iv. Define: Extrachromosomal inheritance
v. Define: Incomplete dominance
