Registration no. - ……..

[Total 30 marks = 10 marks mcqs + 10 marks fill in the blanks + 10 marks one/two words answer]

Mcqs (10) – 1 mark each

Q. Which complex is involved in translation

a. Polysome b. Nucleosome c. Spliceosome d. Lysosome

Q. Which of the following steps is considered as the rate limiting step during eukaryotic initiation of translation?

a. Binding of eIF-4F to the 5' cap of the mRNA
b. ATPase activity of eIF-4A to form the 48S initiation complex
c. Reassociation of 40S and 60S ribosomal subunits
d. Formation of tertiary complex

Q. Elongation of polypeptide requires all the following except:

a. Peptidyl transferase b. Rho factor c. Translocase d. GTPase

Q. Which of the following is required for both prokaryotic and eukaryotic protein synthesis?

a. Binding of small ribosomal subunit to the Shine-Dalgarno sequence
b. Formylated methionyl-tRNA
c. Recognition of 5'cap by initiation factors
d. Translocation of the peptidyl-tRNA from the A site to the P site

Q. The initiation codon AUG codes for

a. Methionine b. Homocysteine c. Formyl methionine d. Adenosyl methionine

Q. Failure of post translational modification occurs in deficiency of which vitamin

a. Ascorbic acid b. Retinol c. Vitamin B12 d. Vitamin D

Q. Conversion of zymogen to active digestive enzymes is

a. Splicing b. Proteolytic degradation c. Covalent modification d. Structural reorganization

Q. Post translational modifications include all except

a. Glycosylation b. Hydroxylation c. Decarboxylation d. Phosphorylation

Q. Which of the following post translational modifications require vitamin K?

a. Methylation of calmodulin
b. ADP-ribosylation of histone protein
c. Hydroxylation of proline and lysine in collagen
d. Carboxylation of glutamate in prothrombin

Q. A 6 years old boy Raju was brought to the pediatric OPD by hid mother. She said that he has stopped playing and complains of weakness and muscle pain. She tells that his milestones(sitting, standing, and walking) were delayed and had started late walking(beyond 18 month of age) and has H/O frequent falls. The mother gave history of her brother dying of similar complains when he was 18 years old. On examination abnormal gait and difficulty in getting up from ground was noted. His serum creatine kinase was 1090 mg/dl (high). What may be the probable diagnosis?

a. Cystic fibrosis
b. Pompe disease
c. Duchene muscular dystrophy
d. Normal physiological process

Fill in the blanks: (10) 1 mark each

1. The initiation codon AUG (in contrast to internal AUG) is identified due to close proximity to …….. 6-10 bp upstream in prokaryotes.

Answer:

PTO

2. Translation starts before transcription is completed as a consequence of lack of …….. in prokaryotes.
Answer:

3. ……. Binds to 30S ribosome to prevent premature association of 30S and 50 S ribosome in initiation process of translation in prokaryotes.
Answer:

4. …… acts as ribozyme and has peptidyl transferase activity.
Answer:

5. …… recognizes UAA and UAG, the stop codon in prokaryotes.
Answer:

6. …… recognizes UAA and UGA, the stop codon in prokaryotes.
Answer:

7. Number of high energy bonds required for total energy expenditure for incorporating ONE amino acid during process of translation is ……..
Answer:

8. …….. protein plays crucial role in protein folding.
Answer:

9. Proteins that are defective (eg. misfolded proteins) are usually degraded with the help of highly conserved protein called ……
Answer:

10. …….. is a common form of dementia, due to abnormal folding of protein and characterized by cerebral amyloid deposits.
Answer:

Answer in a word or two: (5X2)

1. What is the mechanism of action of Diphtheria toxin?
Answer:

2. What is the mechanism of action of Tetracycline?
Answer:

3. What is the mechanism of action of Chloramphenicol?
Answer:

4. What is the mechanism of action of Streptomycin?
Answer:

5. What is the mechanism of action of Erythromycin?
Answer: