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JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- May2018

B.Tech. IV Semester

COURSE CODE: **10B11BT413** MAX. MARKS: **35**

COURSE NAME: **Molecular Biology**

COURSE CREDITS: **03** MAX. TIME: **2 HR**

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.*

Q1 (i). Among these DNA segments, which will have a higher melting temperature? **(1 mark)**

a) GCAGGGACCGGAGGGACG, b) CTTAAAGTTAATGAATTA

(ii). Which of the following processes does not take place in the 5′→3′ direction? **(1 mark)**

a) DNA replication b) Transcription c) Nick translation d) RNA editing

(iii). Name the codon/s which are involved in translation termination. **(1 mark)**

(iv). Define Kozak consensus sequences. **(1 mark)**

(v). what do you understand by the 'template strand' and the 'coding stand'? **(1 mark)**

Q2. a) Differentiate between replication and transcription. **(3 marks)**

b) Why does DNA contain thymine and RNA uracil? **(3 marks)**

Q3a). Explain why Shine-Delgarno Sequences are important in translation? **(2 marks)**

b) Explain the four temporal phases of translation. **(4 marks)**

Q4. a) Why mRNA capping is necessary during post transcription processing events? **(2 marks)**

b) Explain the different molecular events occur during mRNA splicing through nuclear spliceosome process. **(4 marks)**

Q5. Define the role of various histone modifications on regulation of gene expression in Eukaryotic cells. **(6 mark)**

Q6. Explain how the Lac Operon is regulated under the following conditions: **(6 mark)**

(i) In presence of Lactose (ii) In presence of glucose

Study Material Uploaded on LMS