

GURUDAS COLLEGE

**B. Sc. SEMESTER V (Honours) Examination, 2020
Online Internal Assessment, 2020**

Subject: BOTA

Subject Category: Honours

Course: BOT-A-CC-5-11

Course Name: CELL AND MOLECULAR BIOLOGY

Full Marks: 10

Date of Examination: 1st March, 2021

Full Marks – 10

Time – 30 minutes

All questions carry equal marks

Answer any 5 (five) of the following questions

5 X 2 = 10

Q1. Polycistronic mRNA is usually found in

- a) Prokaryotes
- b) Viruses
- c) Bacteria
- d) Eukaryotes

Q2. In mRNA, AUG is the initiation codon and UAA, UAG and UGA are termination codons, therefore polypeptide cannot be synthesized beyond any of these triplets to the end of mRNA. Then which one of the following mRNA can be translated completely?

- a) AUG UUC UCC UGG UAA UAU

- b) AUG UUC UCC UGA UGG UAU
- c) AUC ACG UAU UUC UGA CUC
- d) AUG UAU UUC UGC CUC UAG

Q3. This condition in lac operon facilitates the condition of lac genes being transcribed at high levels

- a) Low glucose, high lactose
- b) Low glucose, low lactose
- c) High glucose, high lactose
- d) High glucose, low lactose

Q4. Which of the following components is not involved during the formation of the replication fork?

- a) Single-strand binding proteins
- b) Helicase
- c) Origin of replication
- d) Ligase

Q5. In eukaryotes, the primary transcripts are processed to remove intervening sequence resulting in mRNA and the process is known as splicing. The complex of RNA, nucleoproteins that execute splicing process is called:

- a) Primosome
- b) Splicing fork
- c) Spliceosome

d) None of the above

Q6. Which of the following is an example of ribozyme?

- a) RNA polymerase
- b) DNA polymerase
- c) RNase P
- d) Topoisomerase

Q7. Which one of the followings is the first step of gene cloning technique?

- a) Insertion of foreign DNA fragment into a vector
- b) Isolation of DNA to be cloned
- c) Transfer of recombinant DNA into bacterial cell
- d) None of the above

Q8. To carry out PCR (Polymerase Chain Reaction), the solution does not contain which of the following component?

- a) All four deoxyribonucleoside triphosphates (dNTPs – the substrates for DNA polymerase)
- b) DNA polymerase
- c) Primers that are complementary to short sequences on each strand of the target DNA
- d) Sucrose

Instructions for submission of answer scripts

1. Write the front page/top sheet as per instruction.
2. Scan the pages in sequence and make a single PDF file.
3. Rename file as per instruction.
4. Email the PDF file within the stipulated time to the following

Email IDs :

- 1) **botasem4GDC@gmail.com**
- 2) **gdexamhons@gmail.com**
- 3) **botahons2020@gmail.com**