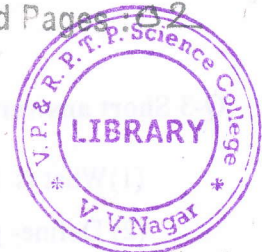[128]   SEAT No._____   No. of Printed Pages : 2

SARDAR PATEL UNIVERSITY
B.Sc. 5th SEMESTER EXAMINATION
Subject / Course Code : Botany (US05CBOT 22)
Genetics and molecular biology
24/11/21, wednesday
03 TO 05 PM

Date: 24-11-2021
Wednesday

Time : 3.00 pm to 5.00 pm

Maximum Marks : 70

Draw neat and labeled diagrams wherever necessary.

Q. 1 Multiple choice question   (10)

(1) Which of the following known as " Drosophila of plant kingdom"

   (a) *E,Coli*   (b) Neurospora

   (c)Pisum   (d)Arabidopsis

(2) _____ Coined the term genetics

   (a) N.Grew   (b)Gregor Mendel   (c)Bateson   (d) R.C.Punnett

(3) Palmella stage is found in

   (a) Chlamydomonas   (b) Neurospora   (c)Yeast   (d) None of these

(4)Synapsis is initiated during_____stage

   (a) Leptotene   (b)Zygotene   (c) Pachytene   (d) Diakinesis

(5) The term "linkage"was coined by

   (a) Sutton   (b) Mendel   (c) T.H.Morgan   (d) Boveri

(6) DNA replication is

   (a)Conservaive   (b) Semi- Conservative and Semi discontinuous

   (c) Semi- Conservative and discontinuous   (d) Conservative and discontinuous

(7) Theta structure of replication in *E,Coli* was given by

   (a) Jacob   (b) Monod   (c) R.Holley   (d) J.Crains

(8) The enzyme required for transcription

   (a) RNase   (b) DNA polymerase (c) RNApolymerase   (d)Restriction enzymes

(9) Termination codon in protein synthesis are

   (a) UAA   (b) UAG   (c) UGA   (d) all of these

(10) The TATA box in eukaryotes also known as

   (a) Pribnow box   (b) Hogness box   (c) Consensus sequence   (d) None of these

Q- 2   Fill in the blanksand True/False   1 x 8=(08)

   (1) _____ is known as the " father of genetics"

   (2) Kappa particles are found in _____

   (3) The term nucleic acid was given by_____

   (4) Sometimesa mRNA molecule carries the codes from several adjacent
       DNA cistrons and become much larger in size.This type of mRNA is called_____

   (5) Macro and micro conidia are found in Neurospora   (True/False)

   (6) Coupling and repulsion hypothesis was given by Sutton   (True/False)

   (7) DNA synthesis is continuous on one strand (3' to 5' strand) is called leading
       Strand   (True/False)

   (8) The sigma factors helps in the recognition of initiation sites   (True/False)

①

(P. T. O.)

Q-3 Short answer question (Attempt any Ten) (20)

(1) What is lytic cycle ?

(2) Define- genetics

(3) Write budding in yeast

(4) Define – Crossing over

(5) What is linkage ?

(6) What is dextral coiling ?

(7) Write the name of nitrogenous bases found in DNA

(8) What is primase in DNA replication ?

(9) What are okazaki fragments ?

(10) What is codon ?

(11) What are leader sequence ?

(12) What is transcription?

Q-4 Long answer question (Attempt any (four) (8 x 4= 32)

(1) Describe branches of genetics

(2) Explain life cycle of Arabidopsis and write its genetic applications

(3) Describe male sterility in plants

(4) Explain mechanism of meiotic crossing over

(5) Write enzyme involved in DNA replication

(6) Describe Watson and Crick's structural model of DNA

(7) Write properties of genetic code

(8) Write post transcription modification of RNA

———————X———————