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NCERT Class 12 Biology: Chapter – 6 Molecular Basis of Inheritance Part 3 (For CBSE, ICSE, IAS, NET, NRA 2022)

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Question 19:

Which of the following are the functions of RNA?

- It is a carrier of genetic information from DNA to ribosomes synthesising polypeptides.
- It carries amino acids to ribosomes.
- It is a constituent component of ribosomes.
- All of the above.

Answer: (d)

Question 20:

While analysing the DNA of an organism a total number of 5386 nucleotides were found out of which the proportion of different bases were: Adenine = 29%, Guanine = 17% , Cytosine = 32% , Thymine = 17% . Considering the Chargaff's rule it can be concluded that:

- it is a double stranded circular DNA
- It is single stranded DNA
- It is a double stranded linear DNA
- No conclusion can be drawn

Answer: (b)

Question 21:

In some viruses, DNA is synthesised by using RNA as template. Such a DNA is called:

- A-DNA
- B-DNA

c. c DNA

d. r DNA

Answer: (c)

Question 22:

If Meselson and Stahl's experiment is continued for four generations in bacteria, the

ratio of $\frac{15_N}{15_N} : \frac{15_N}{14_N} : \frac{14_N}{14_N}$ containing DNA in the fourth generation would be:

a. 1: 1: 0

b. 1: 4: 0

c. 0: 1: 3

d. 0: 1: 7

Answer: (d)

Question 23:

If the sequence of nitrogen bases of the coding strand of DNA in a transcription unit is:

$5' - A T G A A T G - 3'$, the sequence of bases in its RNA transcript would be;

a. $5' - A U G A A U G - 3'$

b. $5' - U A C U U A C - 3'$

c. $5' - C A U U C A U - 3'$

d. $5' - G U A A G U A - 3'$

Answer: (a)

Question 24:

The RNA polymerase holoenzyme transcribes:

a. the promoter, structural gene and the terminator region

b. the promoter, and the

c. the structural gene and the terminator regions

d. the structural gene only.

Answer: (c)

Question 25:

If the base sequence of a codon in mRNA is $5' - AUG - 3'$, the sequence of tRNA pairing with it must be:

- a. $5' - UAC - 3'$
- b. $5' - CAU - 3'$
- c. $5' - AUG - 3'$
- d. $5' - GUA - 3'$

Answer: (b)

Question 26:

The amino acid attaches to the tRNA at its:

- a. $5'$ – end
- b. $3'$ – end
- c. Anti codon site
- d. DHU loop

Answer: (b)

Question 27:

To initiate translation, the mRNA first binds to:

- a. The smaller ribosomal sub-unit,
- b. The larger ribosomal sub-unit
- c. The whole ribosome
- d. No such specificity exists.

Answer: (a)