OPEN STUDENT FOUNDATION
STD 12TH Biology
PRACTICE SHEET DAY 3

CHAPTER 5 genetics | Date : 20/02/24
Total Marks: 30 | Time: 1 hr

Section A

● **Choose correct answer from the given options. [Each carries 1 Mark]** **[10]**

1. In a DNA strand the nucleotides are linked together by
(A) glycosidic bonds (B) phosphodiester bonds (C) peptide bonds (D) hydrogen bonds

2. A nucleoside differs from a nucleotide. It lacks the
(A) base (B) sugar (C) phosphate group (D) hydroxyl group

3. Both deoxyribose and ribose belong to a class of sugars called
(A) trioses (B) hexoses (C) pentoses (D) polysaccharides

4. The fact that a purine base always pairs through hydrogen bonds with a pyrimidine base in the DNA double helix leads to
(A) the antiparallel nature
(B) the semiconservative nature
(C) uniform width throughout DNA
(D) uniform length in all DNA

5. The net electric charge on DNA and histones is
(A) both positive
(B) both negative
(C) negative and positive, respectively
(D) zero

6. The promoter site and the terminator site for transcription are located at
(A) 3' (downstream) end and 5' (upstream) end, respectively of the transcription unit
(B) 5' (upstream) end and 3' (downstream) end, respectively of the transcription unit
(C) the 5' (upstream) end
(D) the 3' (downstream) end

7. Which of the following statements is the most appropriate for sickle cell anaemia ?
(A) It cannot be treated with iron supplements
(B) It is a molecular disease
(C) It confers resistance to acquiring malaria
(D) All of the above

8. Which of the following is true with respect to AUG ?
(A) It codes for methionine only
(B) It is an initiation codon
(C) It codes for methionine in both prokaryotes and eukaryotes
(D) All of the above

9. The first genetic material could be
(A) protein (B) carbohydrates (C) DNA (D) RNA

10. The human chromosome with the highest and least number of genes in them are respectively
(A) Chromosome 21 and Y
(B) Chromosome 1 and X
(C) Chromosome 1 and Y
(D) Chromosome X and Y

Section B

● **Write the answer of the following questions. [Each carries 2 Marks]** **[8]**

1. Write the experiment of Griffth's transforming principle.
2. Give difference : VNTR and Probe
3. Give scientific reason : Viruses can be used in the manufacturing proteins.

4. Give scientific reason : Both the strands of DNA are not copied during transcription.

Section C

- **Write the answer of the following questions.** [Each carries 3 Marks] **[9]**

5. Mention salient features of human genome.
6. Explain - Transcription unit.
7. Explain packaging of DNA Helix.

Section D

- **Write the answer of the following questions.** [Each carries 4 Marks] **[4]**

8. Explain lac operon in presence & absence of inducer.

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Section [A] : 1 Mark MCQ					
No	Ans	Chap	Sec	Que	Universal_QueId
1.	B	Chap 5	S5	1	QP23P11B1214_P1C5S5Q1
2.	C	Chap 5	S5	2	QP23P11B1214_P1C5S5Q2
3.	C	Chap 5	S5	3	QP23P11B1214_P1C5S5Q3
4.	C	Chap 5	S5	4	QP23P11B1214_P1C5S5Q4
5.	C	Chap 5	S5	5	QP23P11B1214_P1C5S5Q5
6.	C	Chap 5	S5	6	QP23P11B1214_P1C5S5Q6
7.	D	Chap 5	S5	7	QP23P11B1214_P1C5S5Q7
8.	D	Chap 5	S5	8	QP23P11B1214_P1C5S5Q8
9.	D	Chap 5	S5	9	QP23P11B1214_P1C5S5Q9
10.	C	Chap 5	S5	11	QP23P11B1214_P1C5S5Q11

Section [B] : 2 Marks Questions					
No	Ans	Chap	Sec	Que	Universal_QueId
1.	-	Chap 5	S1	9.1R	QP23P11B1214_P1C5S1Q9.1R
2.	-	Chap 5	S2	2	QP23P11B1214_P1C5S2Q2
3.	-	Chap 5	S2	7	QP23P11B1214_P1C5S2Q7
4.	-	Chap 5	S2	8	QP23P11B1214_P1C5S2Q8

Section [C] : 3 Marks Questions					
No	Ans	Chap	Sec	Que	Universal_QueId
5.	-	Chap 5	S1	30	QP23P11B1214_P1C5S1Q30
6.	-	Chap 5	S1	18R	QP23P11B1214_P1C5S1Q18R
7.	-	Chap 5	S1	7.1R	QP23P11B1214_P1C5S1Q7.1R

Section [D] : 4 Marks Questions					
No	Ans	Chap	Sec	Que	Universal_QueId
8.	-	Chap 5	S1	26R	QP23P11B1214_P1C5S1Q26R