DPP
DAILY PRACTICE PROBLEMS

CLASS : XIth
DATE :

Solutions

SUBJECT : BIOLOGY
DPP No. : 10

Topic :- MOLECULAR BASIS OF INHERITANCE

1. (E) RNA polymerase II helps in the synthesis of hnRNA or mRNAs. RNA polymerase III helps in the making of rRNAs.

2. (C) polypeptide synthesis is signalled by two initiator codons or start codons i.e., AUG (methionine codon) and rarely by GUG (valine codon).

3. (A)

4. (B) Sickel cell anaemia is due to inheritance of a defective allele coding for β globin. It results in the transformation of Hb^A into Hb^s in which glutamic acid is replaced by valine at sixth position in each of two β -chains of haemoglobin. The substitution of amino acid in the globin protein results due to the single base substitution at the sixthcodon of the beta globin gene from GAG to GUG . Sickel cell anaemia is a blood disease where the red blood cells becomesickle shaped as compared to normal one. The sickle cells are rigid and exhibit a higher viscosity to flow causion them to lodge in capillaries. The major characteristics of this disease are anaemia and a tendency of the red blood cells to change shape at low oxygen concentration.

5. (C)

6. (C) 5- bromo uracil (Bu) is a base analogue of thymine. Transitions are caused by base analogues.

7. (D) Uracil base is found in RNA, in this way, uridine monophosphate is the nucleotide of RNA.

8. (C) Mc Clintock discovered junping genes (Transposons, 1940) in maize and she named them as controlling elements or mobile genetic elements in maize. For this work, she was awarded Nobel prize in (1983)

9. (D) A single amino acid is specified by a sequence of three nucleotides in mRNA i.e., called codon. Due to triplet nature, it consist of 64 codon.

10. (A) UGC and UGU both codons are responsible for cystein amino acid.

11. (B) Transcription is the formation of RNA over the template of DNA. It creates single stranded RNA which has a coded information similar to the sense or coding strand of DNA with the exception that T is replaced by U.

12. (D) Formation of protein with the help of information present in m-RNA is called translation.

13. (C) Temin and Baltimore (1972) discovered Reverse transcription (Teminism) in retroviruses. For this work, Temin, Baltimore and Dulbecco were given Noble prize (1975)

14. (B) Only one of the two strands of DNA possesses correct hereditary information. it is known as sense strand. its complementary strand is called antisense strand. Antisense RNA that is made from the DNA strand that is complementary to the sense strand of the DNA.

15. (A) Plasmids are possesseed by bacteria. These are extrachromosomal DNA. These are used in genetic engineering.

16. (A) DNA polymerase I can also remove thymine dimers produced due to UV irradiation and fill the gap due to excision. The newly formed segment is sealed by DNA ligase.

17. (B) The amount of rRNA is 70-80% of total RNA. It is a constituent of ribosomes. RNAs of eukaryotes are of four types -28S, 18S, 5.8 S and 5S. prokaryotic ribosomes have three types of RNAs –23 S, 16 S amd 5 S.

18. (A) DNA finger printing involves repetitive DNA, because in these sequences a small stretch of DNA is repeated many times.

ANSWER-KEY										
Q.	1	2	3	4	5	6	7	8	9	10
A.	E	C	A	B	C	C	D	C	D	A
Q.	11	12	13	14	15	16	17	18	19	20
A.	B	D	C	B	A	A	B	A		