DPP
DAILY PRACTICE PROBLEMS

Class : XIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 9

Topic :- Cell the Unit of Life

1 **(a)**
A-Centromere, B-Satellite, C-Secondary constriction

2 **(d)**
The two strands run antiparallely, *i.e.*, one strand has phosphodiester linkage in 3'→5' direction, while other strands has phosphodiester linkage in 5'→3' direction.

3 **(a)**
Z-DNA is a double helical are structures of DNA. It is a left-handed double helical structure in which the double helix winds to the left in zig-zag pattern. It has a structure that repeats every 2 base pairs.

4 **(a)**
The movement of ions is called flux. The inward movement into the cells is influx and the outward movement is efflux.

5 **(a)**
A-Outer membrane, B-Inner membrane, C-Matrix, D-Inter-membrane space, E-Cristae

6 **(a)**
Centrioles are capable of replication. Centriole replication is coordinated in animals cell with cell division. It occurs in 5 or G_2-phase

7 **(a)**
B-DNA shows 10 nucleotides per turn (coil) of helix, if there are 20 coils then total number of nucleotides is 200 out of which 120 are adenine (equal amount of thymine). So, the number of guanine (equal amount of cytosine) nucleotides is 80. Three hydrogen bonds are present between guanine and cytosine.

8 **(a)**
Protoplasm is generally found in two states, *i.e.*, peripheral gel like ectoplasm and central sol like endoplasm. Protoplasm shows transformation between sol and gel states is made possible through flocculation or coagulation of protoplasm.

9 **(b)**
Nucleolus is a rounded structure present inside nucleus, having rRNA.

10 **(c)**
The process by which cells loose this specialisation is called dedifferentiation

11 **(c)**
In DNA, the nitrogenous bases are adenine, guanine(purines) and cytosine, thymine (pyrimidines) while RNA contains uracil in place of thymine (both pyrimidines) along with rest three similar to that of DNA.

12 **(c)**
Golgi body is cell organelle, which was first discovered by an Italian neurologist **Camillo Golgi** (1898) in nerve cells. The main function of Golgi body is secretion, cell plate formation, cell wall formation and acrosome formation during spermatogenesis.

13 **(a)**
In prokaryotic cells, the genetic material is not organised into nucleus and all the membrane bound organelles are absent. The histone proteins are absent and therefore, the genetic material is not organised into chromatin

14 **(a)**
According to Chargaff's rule, the total amount of adenine released is equal to the total amount of thymine and similarly total amount of cytosine is equal to total amount of guanine, *i.e*., A=T band C=G. It also states that in natural DNAs, the base ratio A/T is close to unity and C/G is also close to unity
(A+C+=T+G). Thus, in the given option, except A+T=C+G, all are correct.

15 **(b)**
On the plasma membrane of bacteria generally at mid point, there are present some circular coiled bodies called **mesosomes**. Mesosomes are more prominent in Gram+ve bacteria. Mesosomes receive DNA during conjugation and DNA replication enzyme.

16 **(b)**
Bacterial cell envelope consists of three components glycocalyx, cell wall and cell membrane
Glycocalyx It is the outermert mucilage layer of the cell envelope
Cell Wall It is rigid solid covering, which provides shape and structural support to the cell. Cell wall lies between plasma membrane and glycocalyx
Plasma/Cell Membrane It is selectively permeable covering of the cytoplasm that forms the innermost components of cell envelope

17 **(a)**

*t*RNA has amino acid binding site at the 3' end having CCA codon. It looks like clover leaf in two dimensional structure and have anticodon site on anticodon loop.

18 **(c)**

Endoplasmic reticulum is a network of much branched, elaborate system of membrane bound cavities or lumens extending from nucleus to plasma membrane within the cytoplasm.

19 **(c)**

Mitochondria and **chloroplasts** are the autonomous bodies. In these, small circular DNA particles are present which can duplicate and expressed.

20 **(d)**

All passive cells like eggs are larger in size. Larger cells have lower surface volume ratio. All active cells are smaller. If larger cells has to remain active, they are either cylindrical in shape or possess several extensions of the cell membrane. Microvilli are one of such developments. They are found in all those cells, which are active in absorption. These also occur in transfer cells found in plants

ANSWER-KEY										
Q.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A.	**a**	**d**	**a**	**a**	**a**	**a**	**a**	**a**	**b**	**c**
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	**c**	**c**	**a**	**a**	**b**	**b**	**a**	**c**	**c**	**d**