CELL CLASS - IX

QUESTION - ANSWER [PART-2]

18. Differentiate between (a) Metacentric & Telocentric chromosome
(b) Nucleus and nucleolus.

Ans (a) Depending upon the position of centromere in a chromosome it can be metacentric if centromere lies in the centre of chromosomal arm

but if the centromere lies at the terminal position of chromosomal arm, it is called Telocentric

(b) Nucleus in a cell is an oval or spherical dark stained body enclosed by a double layered unit membrane having several pores on it, whereas nucleus is a dark region inside the nucleus which is supposed to be having RNA concentrated region. Nucleolus has no membrane around it.

Rough & Smooth surface endoplasmic reticulum is attached with the nuclear envelope.

19. Prokaryotes lack true nucleus. Explain.

Ans – The nucleus in a prokaryotic cell has no nuclear envelope around it and hence the whole content of nucleus is scattered in the cytoplasm. Such nucleus is sometimes referred to as - Nucleoid. It is in fact not a true nucleus.

20. Write the main function of the following organelles.
(a) Plasma membrane (b) Cell wall (c) Chloroplast (d) chromosomes
(e) Nucleolus

Ans – (a) Plasma membrane – Transport of material in a cell is the prime function of plasma membrane. Apart from this it protects the inner content of the cell.
(b) Cell wall – Protects cellular content and provide rigidity to the cell. Has plasmodesmata for the cell to cell transport.
(c) Chloroplast – Photosynthesis and provides colour to the cell.
(d) Chromosomes – Thread like structure in the cell that transmit heriditary traits from generation to generation. Has genes as heriditary units arranged on chromosomal arms in linear order.
(e) Nucleolus – Dark coloured region inside the nucleus where RNAs are concentrated.

21. Differentiate between various types of plastids.

Ans – Leucoplast – Colourless and store food material in the form of starch, Protein and oils.

Chloroplast – Green in colour and perform photosynthesis.

chromoplast – Variously coloured and provide colour to fruits and petals of flowers.

22. What is the composition of plasma membrane?

Ans – Plasma membrane is chemically made up of Lipo-proteins.

23. What are Grana? What role do they play?

Ans – Grana is the circular, flat sac like structure which contains various photosynthetic pigments. It is the site of light reaction of photosynthesis.

24. Why are pores necessary for nuclear envelope?

Ans – Nuclear envelope seperates nuclear content from the cytoplasm and pores on the nuclear membrane allows the bidirectional movement or transport of material from cytoplasm to nucleus and from nucleus to cytoplasm.

25. Why are genes called heriditary units?

Ans - Genes are the segments DNA double helix located on the chromosomal arms. This DNA segment has some coded information regarding heriditary traits of the organism and express these at chemical level. Hence genes are called heriditary units.

26. What are the differences between prokaryotic and eukaryotic chromosomes?

Ans - Eukaryotic cell has a distinct nucleus containing chromatin material which forms the chromosomes. chromosomes are nucleoprotein chemically i.e Nucleic acid associated with protein. But prokaryotic cell has no such thread like chromosomes and Nucleic acid associated with protein. It has a circular loop of DNA in the cytoplasm.