

- Q.1 Draw a cell structure and mention the various types of cells and tissues with their functions? [14]
- OR**
- Q.1 Explain about mitotic and meiotic cell division? [14]
- Q.2 Define the various types of radiation induced damage to the DNA. Explain any one type of DNA repair pathways. [14]
- OR**
- Q.2 Explain the phenomenon of apoptosis and giant cell formation. [14]
- Q.3 Explain the concept of cell survival curve and target theory. [14]
- OR**
- Q.3 Explain the phenomenon of oxygen effect in radiobiology in detail. [14]
- Q.4 Give a detailed note on NSD and LQ model. [14]
- OR**
- Q.4 Explain the various R's in the cell cycle. [14]
- Q.5 Attempt any **seven** out of twelve. (Each question is of **two** mark). [14]
- (i) Define the term 'inverse dose rate' effect.
 - (ii) Define the term ' α/β ratio as it applies to the LQ model.
 - (iii) Define the phenomenon of potentially lethal damage.
 - (iv) Define repopulation.
 - (v) What is RBE and how is RBE and LET related?
 - (vi) Draw a labelled diagram showing the main phases & relative distribution of each phase in the cell cycle.
 - (vii) What is RET?
 - (viii) What are the functions of mitochondria?
 - (ix) What is DNA?
 - (x) List the physical factors affecting cell survival.
 - (xi) What is "overkilling effect"?
 - (xii) Name two agents which promote mutation?

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