

M.Sc. (Sem.-II) Examination

408

CB Cellular and Molecular Basis of Cancer

Time : 3 Hours]

May-2017

[Max. Marks : 70

Instructions:**All Questions are compulsory****Draw neat and labelled diagram wherever necessary**

1

14

a Describe the differences between Apoptosis and Necrosis.

Or

a Write a note on Genomic instability.

b Explain Lipid metabolism in cancer cells.

Or

b Explain in detail the crabtree effect.

2

14

a Describe different types of cellular stress response.

Or

a Write a note on Apoptotic pathways.

b Write a note on molecular basis of Warburg phenomenon.

Or

b Explain briefly glutamine metabolism in cancer cells.

3

14

a Describe in detail about Tumor blood vessel and highlight how they differ from normal blood vessel.

Or

a Name all the six modes of tumor blood vessels formation? Describe in detail all steps of sprouting angiogenesis

b Explain in detail about the pre-metastatic, micrometastatic to macrometastatic transition.

Or

b State all the models for metastasis progression and discuss in detail any two.

4

14

(P.T.O.)

a Write short note on **any two** with figures of following:

1. Angiostatin
2. thrombospondin-1 (TSP-1),
3. Intussusceptive angiogenesis
4. Hypoxia as mediator Tumor Angiogenesis

Or

a Describe brief all about classification of Tumors Blood Vessels and write in detail about Mother Vessels (MVs).

b Write a note on role of miRNA in invasion and metastasis.

Or

b Explain in detail about the inflammation and its role in invasion and metastasis.

5 Multiple Choice Questions

14

(Mark (✓) the correct answer of the multiple choice questions)

1 Bax is a Bcl 2 family protein involves in _____ activity.

- | | |
|------------------|-----------------|
| a Anti apoptotic | b Pro apoptotic |
| c Regulation | d None of above |

2 AKT has ___ isoforms

- | | |
|---------|--------|
| a One | b Two |
| c Three | d Four |

3 The first new type of tumor angiogenic blood vessels that appear from pre-existing venules and, to a lesser extent, from capillaries is _____

- | | |
|--|--------------------------|
| a Mother vessels | b Vasculogenesis |
| c Glomeruloid microvascular proliferations | d Sprouting angiogenesis |

4 Altered expression of these genes would be rare or absent in the primary tumor and apparent only in the metastatic lesion.

- | | |
|--------------------------------------|-------------------------------|
| a Macrometastatic-colonization genes | b Metastasis Initiation genes |
| c Metastasis-progression genes | d Both b and c |

5 Major conjugation system for Autophagosome formation requires conjugation of

- | | |
|--------------------------|---------------------------|
| a Atg12-Atg5 conjugation | b Atg10-Atg5 conjugation |
| c Atg12-Atg4 conjugation | d Atg12-Atg10 conjugation |

6 The small molecule that inhibits S6K and Akt and has shown anti neoplastic activity in pre clinical studies is

- | | |
|---------|---------|
| a X1418 | b X1419 |
| c X1518 | d X1519 |

7 Continuous type of capillaries have all layers good developed, virtually no gaps and abundant in the _____

- | | |
|---------------------------------------|---|
| a Skin, muscles and brain | b intestinal lining, kidneys & endocrine organs |
| c liver, bone marrow, lymphoid tissue | d Oesophagus, heart, spleen |

