

2019 Scheme

SECOND PROFESSIONAL MBBS DEGREE EXAMINATION

Pathology – Paper I (Neoplasia Model Paper)

Time: 3 Hours Total Marks: 100

- Answer all questions to the point neatly and legibly.
- Indicate the question number correctly.
- Draw diagrams/flow charts wherever necessary.

1. Multiple Choice Questions (1×20 = 20)

Question Numbers i–v are Single Response Type

- The most commonly mutated tumour suppressor gene in human cancers is: a) RB b) APC c) p53 d) VHL
- Which chromosomal translocation is characteristic of Burkitt lymphoma? a) t(9;22) b) t(15;17) c) t(8;14) d) t(14;18)
- The hallmark of anaplasia is: a) Loss of differentiation b) Increased apoptosis c) Hyperplasia d) Metaplasia
- Which of the following is an example of a chemical initiator? a) Estrogen b) Aflatoxin B1 c) Croton oil d) Phenobarbital
- The most common route of metastasis for carcinomas is: a) Hematogenous b) Lymphatic c) Transcoelomic d) CSF

Question Numbers vi–x are Multiple Response Type

- Tumour suppressor genes include: 1.APC 2.RB 3.RET 4.VHL
- Features of malignant tumours include: 1.Anaplasia 2.Metastasis 3.Rapid growth 4.Encapsulation
- DNA oncogenic viruses include: 1.HPV 2.EBV 3.HBV 4.HTLV-1
- Factors involved in invasion and metastasis include: 1.Loss of E-cadherin 2.BM degradation 3.Angiogenesis 4.Increased cell adhesion
- Tumour markers include: 1.AFP 2.PSA 3.CEA 4.Troponin-I

Question Numbers xi–xv are Assertion–Reason Type

- xi. (A) More than 70% of human cancers have defects involving p53. (R) p53 maintains genomic integrity.
- xii. (A) Benign tumours never metastasize. (R) Metastasis is the most reliable feature distinguishing malignant from benign tumours.
- xiii. (A) Erythroplakia has a higher malignant potential than leukoplakia. (R) Severe epithelial dysplasia is more common in erythroplakia.
- xiv. (A) Retinoblastoma develops due to mutations in both RB alleles. (R) RB is a tumour suppressor gene.
- xv. (A) HPV infection is associated with cervical carcinoma. (R) HPV E6 promotes degradation of p53.

Question Numbers xvi–xx are based on a Case Scenario

A 22-year-old woman presents with irregular vaginal bleeding. Cervical biopsy shows squamous cell carcinoma associated with HPV-16.

- xvi. Most probable etiological agent?
- xvii. Which viral protein promotes degradation of p53?
- xviii. Which viral protein binds RB?
- xix. Inactivation of RB results in?
- xx. HPV-induced carcinogenesis occurs primarily by?

LONG ESSAYS (2×10 = 20)

2. Define neoplasia. Enumerate four classes of regulatory genes involved in carcinogenesis with examples. Discuss viral carcinogenesis and tabulate differences between benign and malignant tumours.

3. Define neoplasm. Enumerate the features of anaplasia. Discuss invasion and metastasis of neoplasms in detail.

SHORT ESSAYS (6×6 = 36)

4. Discuss chemical carcinogenesis.

5. Paraneoplastic syndromes.

6. Oncogenic DNA viruses.

7. Define neoplasia. Discuss radiation oncogenesis.

8. Mode of spread of malignant tumours with examples.

9. Define metastasis. Enumerate routes and mechanisms.

SHORT NOTES (6×4 = 24)

10. Mention oncogenic viruses. Describe oncogenesis by HPV.
11. Aetiopathogenesis and morphology of Burkitt lymphoma.
12. Mention tumour markers and their association with cancers.
13. Diagnostic immunohistochemical markers of any four tumours.
14. Role of p53 gene in tumour suppression.
15. Dysplasia.

ADDITIONAL PRACTICE QUESTIONS

16. Cytology in diagnosis of cancer.
17. EBV-induced tumours in humans.
18. Grading and staging of tumours.
19. Proto-oncogene.

MCQ ANSWER KEY

i-C

ii-C

iii-A

iv-B

v-B

vi-C

vii-A

viii-A

ix-A

x-A

xi-A

xii-A

xiii-A

xiv-A

xv-A

xvi-B

xvii-C

xviii-D

xix-C

xx-B