

**MEDICAL ONCOLOGY**

**PAPER-II**

Time: 3 hours  
Max. Marks:100

MED.ONCO. /D/20/17/II

**Important Instructions:**

- *You are provided with 5 answer sheet booklets. Each individual answer sheet booklet consists of 10 pages excluding the covering jackets.*
- *Answers to all the questions must be attempted within these 5 answer sheet booklets which must be later tagged together at the end of the exam.*
- *No additional supplementary answer sheet booklet will be provided.*
- *Attempt all questions in order.*
- *Each question carries 10 marks.*
- *Read the question carefully and answer to the point neatly and legibly.*
- *Do not leave any blank pages between two answers.*
- *Indicate the question number correctly for the answer in the margin space.*
- *Answer all the parts of a single question together.*
- *Start the answer to a question on a fresh page or leave adequate space between two answers.*
- *Draw table/diagrams/flowcharts wherever appropriate.*

**Write short notes on:**

1. a) Response Evaluation Criteria in Solid Tumors (RECIST). 4+3+3  
b) Describe the challenges in using RECIST in patients receiving immunotherapy based treatments, and current approaches available to overcome.  
c) Deauville score in PET-CT imaging of Lymphomas.
2. a) Enumerate the various external catheters available for vascular access in cancer patients using illustrations and compare the advantages and disadvantages of each type. 5+5  
b) Discuss the various catheter related complications and their management.
3. a) Discuss the concept of Measurable residual disease (MRD) in Leukemias using illustrations and its role in patient management in adult and pediatric acute lymphoblastic leukemias. 3+5+2  
b) Describe the three commonly used strategies for MRD measurement in acute lymphoblastic leukemias, their sensitivity, advantages and disadvantages.  
c) What is the current role of MRD evaluation in acute myeloid leukemia?
4. Principles, indications, procedure, evidence and limitations of the following: 5+5  
a) Hyperthermic Intra-Peritoneal Chemotherapy, HIPEC.  
b) Vertebroplasty.
5. a) Emerging role of Precision Medicine in Oncology. 3+4+3  
b) Precision oncology clinical trial designs.  
c) Preclinical models to inform precision oncology.

**P.T.O.**

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6. a) Enumerate the predictive biomarkers used in immunotherapy with checkpoint inhibitors in solid organ cancers. 2+5+3  
b) Role of PDL1 (Programmed-Death Ligand 1) testing as companion diagnostics, including its disadvantages.  
c) Enumerate the common side-effects of checkpoint inhibitors therapies and discuss the management of cutaneous adverse events.
7. a) Role of surgery in cancer prevention and enumerate the conditions in which it can be used. 5+5  
b) Role of surgical prophylaxis in hereditary colorectal cancer syndromes.
8. a) Current TNM staging classification of thyroid cancers. 5+5  
b) Principles of management of differentiated thyroid cancer.
9. a) Role of radionuclides in the evaluation and treatment of neuroendocrine tumors. 5+5  
b) Enumerate the imaging modalities used in whole body imaging in multiple myeloma and discuss the role of diffusion weighted magnetic resonance imaging (MRI).
10. a) What are the general principles of clinical assessment of cancer pain in a patient? 3+3+4  
b) World Health Organization (WHO) 'three-step analgesic ladder' approach to pain management.  
c) Principles of rational use of analgesics in the management of cancer pain.

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