

**PATHOLOGY**  
**PAPER-I**

TIME: 3 HOURS  
MAX. MARKS: 100

PATH/D/19/32/I

**IMPORTANT INSTRUCTIONS**

- This question paper consists of 10 questions divided into Part "A" and part "B", each part containing 5 questions.
- Answers to questions of part A and part B are to be strictly attempted in separate answer sheet(s) and the main + supplementary answer sheet(s) used for each part must be tagged separately.
- Answers to question(s) of Part A attempted in answer sheet(s) of part B or Vice versa shall not be evaluated.
- Answer sheets of Part A and Part B are not to be tagged together.
- Part A and Part B should be mentioned only on the covering page of the respective answer sheets.
- 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:**

**PART A**

1. Role of oncogenes and tumour suppressor genes in carcinogenesis. 10
2. a) Role of free radical injury in the pathogenesis of diseases. 5+5  
b) Graft versus host disease.
3. a) Cyclins and their role in cell cycle regulation. 5+5  
b) Techniques for detection of apoptosis.
4. a) Neutrophil Extracellular Traps(NETs). 5+5  
b) MicroRNAs and cancer.
5. a) Warburg effect. 5+5  
b) Umbilical cord stem cell transplantation.

**P.T.O**