

# National Board of Examinations

**Question Paper Name :** DrNB Clinical Immunology and Rheumatology Paper1  
**Subject Name :** DrNB Clinical Immunology and Rheumatology Paper1  
**Duration :** 180  
**Total Marks :** 100  
**Display Marks:** No

**Maximum Instruction Time :** 0

**Question Number : 1 Question Id : 32718740664 Consider As Subjective : Yes**

Please write your answers in the answer booklet within the allotted pages as follows:-

Question Number	Answer to be attempted within	Question Number	Answer to be attempted within
Q. 1	Page 1-5	Q. 6	Page 26-30
Q. 2	Page 6-10	Q. 7	Page 31-35
Q. 3	Page 11-15	Q. 8	Page 36-40
Q. 4	Page 16-20	Q. 9	Page 41-45
Q. 5	Page 21-25	Q. 10	Page 46-50

1. Interferons (IFN):

- List the different categories of IFN. [1]
- Briefly describe the interferon signalling pathway. [4]
- Discuss the efficacy of any one IFN receptor blocker in any one autoimmune rheumatic disease. [5]

**Question Number : 2 Question Id : 32718740665 Consider As Subjective : Yes**

Regarding major histocompatibility complex:

- Illustrate the structure of the two molecules with diagram. [1+1]
- How antigen is processed in any one pathway? [3]
- MHC-I-o-pathies. [5]

**Question Number : 3 Question Id : 32718740666 Consider As Subjective : Yes**

CAR-T cell therapy:

- a. Discuss the principles involved in the bioengineering. [5]
- b. Potential applications of the various CAR-T cells in Rheumatology. [5]

**Question Number : 4 Question Id : 32718740667 Consider As Subjective : Yes**

Bone homeostasis:

- a. Normal mechanisms of bone remodeling with diagram. [4]
- b. Role of RANK–RANKL–OPG pathway. [3]
- c. Mechanism of age-related osteoporosis. [3]

**Question Number : 5 Question Id : 32718740668 Consider As Subjective : Yes**

IL12-23 pathway:

- a. Discuss the structure of the two cytokines with relevance to therapeutic targets. [4]
- b. List the currently available inhibitors used in rheumatology and the evidence for efficacy. [2+4]

**Question Number : 6 Question Id : 32718740669 Consider As Subjective : Yes**

Pattern Recognition Receptors (PRRs):

- a. Definition and explain their physiological role. [4]
- b. Compare and contrast endosomal vs cytoplasmic PRRs with examples. [3]
- c. Discuss therapeutic strategies targeting PRRs in rheumatic diseases. [3]

**Question Number : 7 Question Id : 32718740670 Consider As Subjective : Yes**

Pulmonary arterial hypertension in scleroderma:

- a. Role of myofibroblasts. [3]
- b. Cellular pathways involved. [4]
- c. Efficacy of drugs approved for use. [3]

**Question Number : 8 Question Id : 32718740671 Consider As Subjective : Yes**

Secondary lymphoid organs:

- a. Where are they found? [2]
- b. Discuss the events occurring during germinal centre reaction. [5]
- c. What are the major surface molecules involved in the cellular events in the germinal centre reaction? [3]

**Question Number : 9 Question Id : 32718740672 Consider As Subjective : Yes**

Role of thymus in immunity:

- a. Discuss the development of thymocytes till they exit the organ. [5]
- b. Discuss the function of the gene, defect in which is central to thymus related autoimmunity. [5]

**Question Number : 10 Question Id : 32718740673 Consider As Subjective : Yes**

- a) Draw a diagram detailing the cross sectional appearance of the rotator cuff. [5]
- b) Explain the concept of enthesitis as an organ. [5]