

# National Board of Examinations

**Question Paper Name :** DNB Physiology Paper1  
**Subject Name :** DNB Physiology Paper1  
**Duration :** 180  
**Total Marks :** 100  
**Display Marks:** No

**Maximum Instruction Time :** 0

**Question Number : 1 Question Id : 32718738304 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. Discuss the basic structure of the cell membrane. Add a note on the membrane glycoproteins and cell glycocalyx. [4+4+2]

**Question Number : 2 Question Id : 32718738305 Consider As Subjective : Yes**

What is positive feedback control system. Discuss its role in health and disease. Add a note on feed forward and adaptive control mechanisms. [2+6+2]

**Question Number : 3 Question Id : 32718738306 Consider As Subjective : Yes**

Describe the mechanism of Potassium homeostasis. [10]

**Question Number : 4 Question Id : 32718738307 Consider As Subjective : Yes**

- a) Micro RNA (miRNA) and Small interfering RNA (siRNA). [4]
- b) Role of promoter in control of gene expression. [3]
- c) Stem cells. [3]

**Question Number : 5 Question Id : 32718738308 Consider As Subjective : Yes**

a) Contributions of:

(i) William Einthoven in the field of Cardiology. [3]

(ii) Robert F. Furchgott. [3]

b) Cilia and ciliary movements. [4]

**Question Number : 6 Question Id : 32718738309 Consider As Subjective : Yes**

a) Secondary active transport mechanisms. [4]

b) Gap junctions. [3]

c) Patch clamp technique. [3]

**Question Number : 7 Question Id : 32718738310 Consider As Subjective : Yes**

List the major theories of aging in humans and elaborate any two. What is the “Blue Zone” phenomenon? [8+2]

**Question Number : 8 Question Id : 32718738311 Consider As Subjective : Yes**

Describe briefly the physio-clinical significance of:

a) Molecular motors. [3]

b) JAK-STAT pathway. [3]

c) Acute Phase Proteins. [4]

**Question Number : 9 Question Id : 32718738312 Consider As Subjective : Yes**

Discuss the physiological basis of the genesis and propagation of action potential in nerve fibers. Add a note on phenomenon of plateau in some action potentials. [7+3]

**Question Number : 10 Question Id : 32718738313 Consider As Subjective : Yes**

a) Implementation of Self-Directed Learning in Phase 1 MBBS students. [5]

b) ANOVA. [5]