

National Board of Examinations

Question Paper Name : DNB Physiology Paper4
Subject Name : DNB Physiology Paper4
Duration : 182
Total Marks : 100
Display Marks: No

Maximum Instruction Time : 0
Is Section Default? : No

Question Number : 1 Question Id : 32718745387 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. a) Define mean arterial pressure and its determinants. [3]
- b) Explain physiological basis of measuring blood pressure using oscillometric method. [4]
- c) Mention recent advances in wearable blood pressure monitoring. [3]

Question Number : 2 Question Id : 32718745388 Consider As Subjective : Yes

- a) Define renal plasma flow. [2]
- b) Explain the role of clearance of PAH in measuring RPF and creatinine in measuring GFR. [5]
- c) Name two modern imaging modalities estimating renal perfusion. [3]

Question Number : 3 Question Id : 32718745389 Consider As Subjective : Yes

- a) Define evoked potentials. [2]
- b) Explain the physiology of sensory evoked potential. [5]
- c) Mention two recent clinical uses of evoked potentials. [3]

Question Number : 4 Question Id : 32718745390 Consider As Subjective : Yes

- a) Define VO_2 max. [2]
- b) Explain cardiovascular adaptations to endurance training. [5]
- c) Modern tools for home-based exercise monitoring. [3]

Question Number : 5 Question Id : 32718745391 Consider As Subjective : Yes

- a) Define gastric emptying time. [2]
- b) Explain factors affecting gastric emptying. [5]
- c) Recent advances in gastric motility monitoring. [3]

Question Number : 6 Question Id : 32718745392 Consider As Subjective : Yes

- a) Define acclimatization. [2]
- b) Discuss the various cardio-respiratory responses during high altitude exposure. [5]
- c) Mention any two recent prophylactic strategies for acute mountain sickness. [3]

Question Number : 7 Question Id : 32718745393 Consider As Subjective : Yes

- a) Define circadian rhythm. [2]
- b) Explain physiology of REM and NREM sleep. [5]
- c) State two modern tools for sleep monitoring. [3]

Question Number : 8 Question Id : 32718745394 Consider As Subjective : Yes

- a) Define Heart Rate variability (HRV). Describe various time domain parameters of HRV. [3]
- b) Physiology of sympathetic and parasympathetic effects on HR. [4]
- c) Name two modern HRV-based clinical uses. [3]

Question Number : 9 Question Id : 32718745395 Consider As Subjective : Yes

- a) Describe the process of innate immunity. [3]
- b) Explain role of cytokines in inflammation. [4]
- c) Mention modern cytokine measurement tools. [3]

Question Number : 10 Question Id : 32718745396 Consider As Subjective : Yes

- a) Define sarcopenia. [3]
- b) Explain mechanisms of age-related muscle loss. [4]
- c) Mention recent advances in monitoring muscle mass. [3]