FINAL EXAM
DECEMBER 2019

 NATIONAL BOARD OF EXAMINATIONS

PHYSIOLOGY

PAPER-II

Time: 3 Hours
Max. Marks: 100

PHY/D/19/36/II

Important Instructions:

- *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. Enumerate the primary determinants of cardiac output. Explain the physiological basis of changes in cardiac output: 2+4+4
   a) After a meal.
   b) Change of posture from lying to standing.

2. Explain the physiological mechanism underlying: 5+5
   a) Sinus arrhythmia.
   b) Rise of blood pressure during exercise.

3. a) Describe the role of kidney in regulation of blood pressure. 5+5
   b) Add a note on Goldblatt hypertension.

4. a) Describe the renal mechanisms for dilution and concentration of urine. 7+3
   b) Describe the methods used for assessment of renal diluting and concentrating ability.

5. a) Enumerate various neural regions that are part of neural network for regulation of the respiration. 5+5
   b) Describe the mechanism for generation of respiratory rhythm.

6. a) Outline the principles and procedure to calculate caloric requirement of an individual. 7+3
   b) Explain specific dynamic action of food.

7. a) Enumerate with example, different type of rhythms in human body. 4+6
   b) Explain the mechanism of entrainment of circadian rhythms with day-night cycle.

8. Describe the enteric nervous system and its role in different function of the gastrointestinal tract. 10

9. State the composition, function and phases of pancreatic secretion. 10

10. a) Define and classify hypoxia. 2+5+3
    b) Describe the bodily effects of hypoxia.
    c) Describe the physiological basis of treatment of each type of hypoxia.

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