



BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – B.Sc.(PA)-2022/B.Sc.(PA)-2023
Course Name – Human Physiology- Part II
Course Code - BPAC202
(Semester II)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Recognize the site of respiration inside the lungs is
- | | |
|------------|----------------|
| a) Alveoli | b) Diaphragm |
| c) Bronchi | d) Bronchioles |
- (ii) Choose the Pulmonary ventilation movements is due to
- | | |
|------------------|---------------------------------|
| a) Diaphragm | b) Costal muscles and diaphragm |
| c) Wall of lungs | d) Costal muscles |
- (iii) Predict chemoreceptors monitor the level of gases we inspire and can be found in all these areas except the
- | | |
|-------------------|----------|
| a) carotid bodies | b) nose |
| c) aortic arch | d) brain |
- (iv) Indicate Functional residual capacity
- | | |
|--|--|
| a) affected by the elastic recoil of both the lungs and chest wall but not the strength of the inspiratory or expiratory muscles | b) the volume left in the lungs after a maximum expiration |
| c) the sum of residual volume and tidal volume | d) the volume in the lungs when intrapleural pressure is about 0.5 kPa above atmospheric |
- (v) Interpret which of the following substances stimulates the release of bile from the gallbladder
- | | |
|-------------|--------------------|
| a) Gastrin | b) Cholecystokinin |
| c) Secretin | d) None of these |
- (vi) *Vibrio cholerae* causes diarrhea interpreted as

- a) increases HCO₃⁻ secretory channels in intestinal epithelial cells
- b) increases Cl⁻ secretory channels in crypt cells
- c) prevents the absorption of glucose and causes water to be retained in the intestinal lumen isosmotically
- d) inhibits cyclic adenosine monophosphate (cAMP) production in intestinal epithelial cells
- (vii) Identify Trypsin breaks
- a) cleave peptide bonds on carboxyl side of aromatic amino acids
- b) cleaves bonds near the carboxy terminal sides of basic amino acids
- c) bonds mid portion of peptide
- d) peptide bonds on carboxyl side of basic amino acids
- (viii) Vital capacity of lung is interpreted as
- a) TV+IRV+ERV
- b) IRV+ERV
- c) TV+ERV
- d) TV+IRV+RV
- (ix) Identify this disease is due to allergens
- a) Emphysema
- b) Bronchitis
- c) Pneumonia
- d) Asthma
- (x) Identify which of the following option is not considered as skin appendage?
- a) Nail
- b) Carotene
- c) Hair, Hair follicles
- d) Sweat gland
- (xi) Identify the gland that is located at the base of the throat, just inferior to the laryngeal prominence (Adam's apple)
- a) Pituitary
- b) Pineal gland
- c) Hypothalamus
- d) Thyroid
- (xii) Select the hormone which regulates the basal metabolism in our body is secreted from
- a) Adrenal cortex
- b) Pancreas
- c) Pituitary
- d) Thyroid
- (xiii) The clusters of cells in the pancreas that produce hormones are interpreted as
- a) Nodules
- b) Islets of Langerhans
- c) Pancreatic medulla
- d) Pancreatic cortex
- (xiv) Give example of hormone which is not secreted under influence of pituitary gland?
- a) Thyroxine
- b) Aldosterone
- c) Oestrogen
- d) Glucocorticoids
- (xv) Vasopressin is related as
- a) Synovial fluid
- b) Neurotransmitter
- c) Antidiuretic hormone
- d) Growth regulating substance

Group-B

(Short Answer Type Questions)

3 x 5=15

Answer all questions

2. Describe the nonrespiratory functions of Lungs (3)
3. Discuss the role of HCl in protein digestion (3)
4. Illustrate the role of glucagon in regulating blood glucose levels (3)
5. Describe the hormonal regulation of ovulation in females. (3)
6. Evaluate the factors affecting Glomerular filtration rate (GFR) (3)
- OR**
- Illustrate different types of nephrons in respect of their position in kidney (3)

Group-C
(Long Answer Type Questions)
Answer all questions

5 x 6=30

7. Illustrate the process of gas exchange to the overall function of the respiratory system. (5)
8. Indicate the mechanisms by which oxygen and carbon dioxide are transported in the blood. (5)
9. Explain the process of carbohydrate digestion, including the role of amylase and maltase (5)
10. Mention functions of Thyroid gland (5)
11. Describe the hormonal regulation of the menstrual cycle in females. (5)
12. Estimate the lung volumes and lung capacities (5)

OR

Estimate the volumes and capacities of the respiratory system and their significance in respiratory physiology (5)
