BRAINWARE UNIVERSITY

Term End Examination 2024-2025
Programme – B.Sc.(CCT)-2021/B.Sc.(CCT)-2022/B.Sc.(CCT)-2023
Course Name – Applied Anatomy and Physiology related to critical care
Course Code - BCCTC301
(Semester III)

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) Recall the following functions by filtering and keeping the mucus and dirt away from our lungs.

a) Cilia. b) Bronchioles.
c) Hairs in the lungs. d) All of these.

(ii) Select the following is the correct sequence of air passage during inhalation?

a) Pharynx > Larynx > Trachea > Bronchi > Alveoli b) Larynx > Pharynx > Bronchi > Trachea > Alveoli
c) Pharynx > Trachea > Larynx > Bronchi > Alveoli d) Larynx > Trachea > Pharynx > Bronchi > Alveoli

(iii) Choose the following is NOT part of the lower respiratory tract?

a) Bronchi b) Larynx
c) Trachea d) Alveoli

(iv) Choose the medical term for the surgical removal of a lung?

a) Lobectomy b) Pneumectomy
c) Thoracotomy d) Tracheostomy

(v) Select the following is not a primary function of the respiratory system?

a) Speech production b) Acid-base balance regulation
c) Sense of smell d) Temperature regulation

(vi) Choose the following is responsible for producing surfactant to reduce surface tension in the alveoli?

a) Type I alveolar cells b) Type II alveolar cells
c) Macrophages d) Mast cells

(vii) Select the following is the main stimulus for increasing the rate and depth of breathing?

a) Low blood oxygen levels b) High blood carbon dioxide levels
c) High blood oxygen levels d) Low blood carbon dioxide levels

(viii) Name the valve between the left atrium and left ventricle is called:

a) Tricuspid valve
b) Pulmonary valve
c) Aortic valve
d) Mitral valve

(ix) Identify the purpose of the P wave in an electrocardiogram (ECG)?

a) Atrial depolarization
b) Ventricular depolarization
c) Atrial repolarization
d) Ventricular repolarization

(x) Select a potential consequence of untreated high blood pressure?

a) Increased energy levels
b) Weight loss
c) Kidney damage, heart disease, and stroke
d) Improved cognitive function

(xi) Choose the following describes the process of expiration during quiet breathing?

a) Active contraction of the diaphragm
b) Passive relaxation of the diaphragm and external intercostals
c) Active contraction of the external intercostals
d) Contraction of the abdominal muscles

(xii) Select the following is a common site for measuring central venous pressure (CVP)?

a) Femoral vein
b) Jugular vein
c) Radial artery
d) Popliteal vein

(xiii) Select the primary purpose of arterial cannulation in medical practice?

a) To administer medications
b) To measure blood pressure
c) To monitor oxygen saturation
d) To monitor oxygen saturation

(xiv) Identify the primary purpose of diagnosing brain death in a patient?

a) To determine if they can recover consciousness
b) To facilitate organ donation
c) To preserve the body for future medical advancements
d) To prolong life through advanced life support

(xv) Choose the following factors can lead to an increase in cerebral blood flow?

a) Hyperventilation
b) Hypothermia
c) Increased intracranial pressure
d) Dehydration

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Describe the role of diaphragm in respiration. (3)
3. Explain the structure and function of alveoli in the respiratory system. (3)
4. Explain mean arterial pressure (MAP)? (3)
5. Describe the role of neurons in the nervous system? (3)
6. Justify about the primary function of the peripheral nervous system (PNS)? (3)

OR

Explain about the primary functions of the cerebellum in the central nervous system? (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Name any four neurotransmitters and describe their functions. (5)
8. Differentiate between the upper and lower respiratory tracts. (5)
9. Discuss about the relationship between airway resistance and lung compliance. (5)
10. Describe the components of an ECG (Electrocardiogram) waveform. (5)
11. Differentiate between the systole and diastole in the cardiac cycle. (5)
12. Classify heart block with pathology. (5)

OR

Explain cardiac output and stroke volume in details. (5)