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VICTORIA NURSING COUNCIL

Nurses Act 1958

FIRST PROFESSIONAL EXAMINATION-GENERAL NURSE TRAINING

1st and 2nd September, 1965

ANATOMY, PHYSIOLOGY AND HYGIENE PAPER

Time allowed: Two hours and a half

IMPORTANT:-

Read your questions very carefully.
Answer only what is asked as no marks will be given for irrelevant material.
Use relevant diagrams wherever possible.
ALL questions to be answered.

1. The Circulatory System

- (a) What is the normal life span of a red blood cell (corpuscle)?
-(1 mark)
 - (b) Where are red blood cells (corpuscles) destroyed? -(1 mark)
 - (c) Which of the plasma proteins is necessary for the coagulation of blood? -(1 mark)
 - (d) What is the function of blood platelets? -(1 mark)
 - (e) Which vitamin is necessary for the formation of prothrombin by the liver? -(1 mark)
 - (f) Where is heparin produced and what is its function? -(2 marks)
 - (g) Where are polymorphonuclear leucocytes (granulocytes) produced? -(1 mark)
 - (h) Which mineral combines with the protein globin to form haemoglobin? -(1 mark)
 - (i) How does serum differ from plasma? -(1 mark)
- (10 marks)

2. The Lymphatic System

- (a) State the functions of the lymph glands (nodes). -(3 marks)
 - (b) Which parts of the body are drained by the thoracic duct? -(2 marks)
- (5 marks)

3. The Digestive System.

- (a) List the constituents of gastric juice and state the function of each constituent. -(5 marks)
 - (b) Describe the mechanical and chemical processes involved in the digestion of carbohydrate and describe its absorption. -(10 marks)
- (15 marks)

4. The Urinary System

- (a) What natural factors alter the volume and specific gravity of urine? -(2 marks)

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4. (b) What part do the renal tubules play in altering the volume and specific gravity of urine? Include in your answer an explanation of the hormonal control of the tubules. -(4 marks)
-(6 marks)
5. The Reproductive System
- (a) What are the functions of the uterus? -(2 marks)
 - (b) Name the hormones which directly cause changes in the lining of the uterus following menstruation -(2 marks)
 - (c) How often do the ovaries normally release an ovum? -(1 mark)
 - (d) What is the function of the ciliated epithelium which lines the Fallopian tubes? -(1 mark)
 - (e) What type of tissue lines the vagina? -(1 mark)
 - (f) State the position of the prostate gland. -(1 mark)
 - (g) What are the functions of the testes? -(2 marks)
- (10 marks)
6. The Respiratory System
- (a) State the function of the C-shaped cartilaginous rings of the trachea. -(1 mark)
 - (b) What type of tissue lines the trachea? -(1 mark)
 - (c) (i) Where is the respiratory centre situated? -(1 mark)
(ii) What is its function? -(1 mark)
(iii) By what is it stimulated? -(1 mark)
 - (d) Describe the mechanisms by which air enters and leaves the lungs during quiet breathing. -(5 marks)
- (10 marks)
7. The Osseous System
- (a) Name the bones which play a part in the formation of the shoulder joint. -(2 marks)
 - (b) State the function of the vertebral column. -(3 marks)
- (5 marks)
8. Joints
- (a) What are the functions of the following joint structures:-
 - (i) joint capsule;
 - (ii) hyaline cartilage;
 - (iii) synovial fluid?-(3 marks)
 - (b) List the separate movements of which the hip joint is capable. -(2 marks)
- (5 marks)
9. Hygiene and Nutrition
- (a) Why is adequate ventilation essential in a hospital ward? -(2 marks)
 - (b) What are the responsibilities of the nurse in the prevention of contamination of food? -(3 marks)
 - (c) (i) What do you understand by the term first class protein? -(3 marks)
(ii) Give two (2) examples of first class protein. -(3 marks)
 - (d) Which vitamin is essential for:-
 - (i) formation of intercellular substance (cement)? -(1 mark)
 - (ii) absorption of calcium? -(1 mark)
- (10 marks)
10. The Endocrine System
- State the source and chief function of the following hormones:-
- (a) Insulin.
 - (b) Thyroxine.
 - (c) Growth hormone.
- (6 marks)

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11. The Nervous System

- (a) Draw and label a diagram of a spinal reflex arc and explain its action. -(5 marks)
 - (b) Give two (2) examples of reflex action. -(2 marks)
 - (c) Which part of the central nervous system plays a part in the control of:
 - (i) equilibrium or balance; -(1 mark)
 - (ii) motor activity? -(1 mark)
 - (d) Where is cerebro-spinal fluid produced? -(1 mark)
- (10 marks)

12. The Heart

- (a) Which chamber of the heart has the thickest muscle wall? Give the reason. -(2 marks)
 - (b) What is the function of the semi-lunar valves? -(1 mark)
 - (c) Name the vessels which supply the myocardium with oxygenated blood. -(1 mark)
 - (d) State two (2) ways in which cardiac muscle differs from skeletal muscle. -(2 marks)
 - (e) Which nerve slows the rate of cardiac contraction? -(1 mark)
 - (f) What is the function of the tendinous cords (chordae tendinae) of the heart? -(1 mark)
- (8 marks)
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