

Date of Examination



No of Questions:
No of Pages :

GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY

SELECTION TEST FOR THE ENROLLMENT OF DAY SCHOLARS - INTAKE 41

**BSc (Hons) Nursing / BSc (Hons) Physiotherapy / BSc (Hons) Medical Laboratory Sciences /
BSc (Hons) Radiography / BSc (Hons) Radiotherapy / Bachelor of Pharmacy (Hons)**

SUBJECT KNOWLEDGE - 2023

Instructions:

Answer all questions.

Use the answer sheet given to you.

Mark an 'X' in the box representing the correct answer against the relevant question number.

There is only a single correct answer for each question. Avoid marking multiple answers.

Biology

- Which one of the following organelles is involved in modifying and packaging proteins?
 - Ribosomes.
 - Golgi complex.
 - Smooth endoplasmic reticulum.
 - Rough endoplasmic reticulum.
- Rickets is caused by the deficiency of
 - Vitamin A.
 - Vitamin E.
 - Vitamin D.
 - Vitamin B.
- Energy currency of the human body is
 - ADP.
 - ATP.
 - NADH.
 - FADH.
- Prokaryotic cells lack
 - plasma membranes.
 - DNA.
 - membrane bound organelles.
 - ribosomes.

5. The functional and structural unit of the kidney is
 - A. Bowman's capsule.
 - B. Nephron.
 - C. loop of Henle.
 - D. proximal convoluted tubule.

6. Which one of the following is a virus?
 - E. Salmonella typhi
 - F. Clostridium tetani
 - G. Vibrio cholera
 - H. Herpes simplex

7. Which of the following cell is involved in oxygen transport in the human body?
 - A. Monocyte
 - B. Erythrocyte
 - C. Lymphocyte
 - D. Eosinophil

8. Maximum water reabsorption in human nephrons occurs in
 - A. Proximal convoluted tubule
 - B. Distal convoluted tubule
 - C. Descending limb of the loop of Henle
 - D. ascending limb of the loop of Henle

9. The functional and structural unit of the kidney is
 - E. Bowman's capsule.
 - F. Nephron.
 - G. loop of Henle.
 - H. proximal convoluted tubule.

10. Which one of the following is **incorrect** regarding human saliva?
 - A. It contains two enzymes.
 - B. The pH ranges from 6.5- 7.4.
 - C. It possesses antibacterial properties.
 - D. Secretion is enhanced by parasympathetic stimulation.

11. Which of the following pathogens uses the gastrointestinal tract of man as a portal of entry?
 - A. *Clostridium tetani*.
 - B. *Salmonella typhi*.
 - C. *Neisseria gonorrhoeae*.
 - D. *Mycobacterium tuberculosis*.

12. Stimulation of parasympathetic nervous system of man
 - A. dilates the pupil of the eye.
 - B. stimulates the secretion of saliva.
 - C. inhibits the secretion of intestinal juice.
 - D. increases blood pressure.

13. Components of chlorophyll molecule are
- A. C, H, O, N, Mg.
 - B. C, H, O, S, Mg.
 - C. C, H, O, N, Fe.
 - D. C, H, O, Mg, Fe.
14. Which of the following organelle is not found in a human cell?
- A. Golgi apparatus.
 - B. Endoplasmic reticulum.
 - C. Mitochondria.
 - D. 70s ribosome.
15. Select the **incorrect** statement regarding skeletal muscle fibers.
- A. They are branched.
 - B. They are multinucleate.
 - C. They are neurogenic.
 - D. They are striated.

Chemistry

16. The most electronegative element among the following is
- A. Sodium.
 - B. Bromine.
 - C. Francium.
 - D. Oxygen.
17. The metal used to recover copper from a solution of copper sulfate is
- A. Na.
 - B. Ag.
 - C. Hg.
 - D. Fe.
18. Which of the following gives the correct sequence of compounds to represent bond nature as polar covalent, ionic, and non-polar covalent respectively?
- A. SiO₂, CaO, I₂.
 - B. CaO, SiO₂, I₂.
 - C. I₂, CaO, SiO₂.
 - D. SiO₂, I₂, CaO.
19. To dilute a concentrated acid,
- A. add water to the acid.
 - B. add the acid to water.
 - C. mix both the acid and water simultaneously.

D. never mixes acid and water.

20. Most electronegative element among the following is
- E. Sodium.
 - F. Bromine.
 - G. Francium.
 - H. Oxygen.

Physics

21. Which statement from the following **does not** describe a reaction at equilibrium?
- A. Forward and backward reactions occur at equal rates.
 - B. The system must be closed.
 - C. Equilibrium constant (K_c) increases as the reaction progresses.
 - D. Concentrations of reactants and products are constant.
22. A stone dropped from rest reaches the ground in 8 seconds. The distance traveled by the stone in the last second is
- A. 320 m.
 - B. 160 m.
 - C. 75 m.
 - D. 70 m.
23. A washing machine is operated with a motor of 320 W and the rotating disc of it has a moment of inertia of 5 kgm^2 . Starting from rest, how long will it take to acquire a frequency of 240 rpm under the above power? ($\pi^2 = 10$)
- A. 3 s
 - B. 5 s
 - C. 8 s
 - D. 10 s
24. The range of length scale in meters used in nanotechnology is
- A. 0.1 – 10.
 - B. 10^{-4} – 10^{-2} .
 - C. 10^{-9} – 10^{-7} .
 - D. 10^{-15} – 10^{-13} .
25. A stretched wire vibrates forming four loops. If the frequency of vibration is increased by a factor of 2, the number of loops formed would be
- A. 5.
 - B. 6.
 - C. 7.
 - D. 8.