



MDCAT – SAMPLE PAPER

Name: _____

Roll No: _____

CNIC: _____

INSTRUCTIONS:

- Number of Multiple Choice Questions (MCQs): **200**
- Time Allowed: **2 Hours 30 Minutes**
- Each MCQ shall carry 1 (One) mark with **No Negative Marking**.
- Each MCQ has 4 (Four) options. **Select the most appropriate (one best) option.**
- **Fill the correct bubble on the answer sheet, corresponding to the question paper code.**
- Answering with more than one option will not be considered for marking.
- Avoid cutting, overwriting and erasing.
- Fill the answer sheet with black / blue ball point only.

| S.NO | Question | Key | Content / TOS | Difficulty Level |
|-----------------------|--|-----|--|------------------|
| <u>BIOLOGY</u> | | | | |
| 1. | Chief material present in the cell walls of plants, fungal and prokaryotic cells are: | C | Cell Structure & Function (Cell wall) | Moderate |
| | a. Proteins | | | |
| | b. Lipids | | | |
| | c. Polysaccharides | | | |
| | d. Phospholipids | | | |
| 2. | Which of the following cells does not have nucleus? | D | Cells Structure & Function (Nucleus) | Easy |
| | a. Muscle cell | | | |
| | b. Nerve cell | | | |
| | c. White Blood cell | | | |
| | d. Red blood cell | | | |
| 3. | Most abundant organic compound in mammalian cell is: | D | Biological Molecules | Moderate |
| | a. Water | | | |
| | b. Lipids | | | |
| | c. Carbohydrates | | | |
| | d. Proteins | | | |
| 4. | Cysts are not resistant to _____ but spores are: | D | Prokaryotes Reproduction (Fission and spore formation) | Moderate |
| | a. Light | | | |
| | b. Desiccation | | | |
| | c. pH | | | |
| | d. Heat | | | |
| 5. | The most successful land adapting plants are: | D | Diversity among Plants (Angiosperms) | Easy |
| | a. Mosses | | | |
| | b. Ferns | | | |
| | c. Gymnosperms | | | |
| | d. Angiosperms | | | |

| | | | | | |
|------------|--|----------------------------|---|---|----------|
| 6. | Intrinsic factor is secreted by: | | C | Life Processes in Animals & Plants (Life processes in animal) | Moderate |
| | a. | Pancreas | | | |
| | b. | Liver | | | |
| | c. | Stomach | | | |
| | d. | Duodenum | | | |
| 7. | In human gut, chylomicrons are formed by the combination of: | | B | Life Processes in Animals & Plants (Intestine) | Hard |
| | a. | Proteins and carbohydrates | | | |
| | b. | Fats and proteins | | | |
| | c. | Fats and carbohydrates | | | |
| | d. | Vitamins and fats | | | |
| 8. | Which organ is called as the body's thermostat? | | C | Homeostasis | Easy |
| | a. | Pituitary gland | | | |
| | b. | Kidneys | | | |
| | c. | Hypothalamus | | | |
| | d. | Adrenal gland | | | |
| 9. | Myofibrils within the muscle fibres contain thick and thin filaments made up of _____ and _____ respectively: | | A | Support and Movement | Moderate |
| | a. | Myosin and actin | | | |
| | b. | Globulin and albumin | | | |
| | c. | Troponin and Tropomyosin | | | |
| | d. | Fibrin and Fibrinogen | | | |
| 10. | Which hormone is chemically a steroid? | | C | Coordination and Control (Chemical Coordination - Hormones) | Moderate |
| | a. | ADH | | | |
| | b. | Thyroxin | | | |
| | c. | Cortisone | | | |
| | d. | Insulin | | | |
| 11. | Which brain portion is responsible for controlling body coordination? | | C | Coordination and Control (Human Nervous System) | Easy |
| | a. | Medulla | | | |
| | b. | Amygdala | | | |
| | c. | Cerebellum | | | |
| | d. | Pons | | | |

| | | | | | |
|-------------------------|--|---|---|--|----------|
| 12. | Erythroblastosis foetalis occurs when mother is Rh –ve and father is: | | B | Variation and Genetics/ Inheritance | Hard |
| | a. | Also Rh –ve | | | |
| | b. | Rh +Ve | | | |
| | c. | Haemophilaic | | | |
| | d. | Color blind | | | |
| <u>CHEMISTRY</u> | | | | | |
| 13. | Many elements have fractional atomic masses. This is because: | | D | Intro to Fundamental Concepts of Chemistry (Basic Concepts/ Atomic masses) | Moderate |
| | a. | Mass of atom is itself fractional | | | |
| | b. | Atomic masses are average masses of isobars | | | |
| | c. | Atomic masses are average masses of isotopes | | | |
| | d. | Atomic masses are average masses of isotopes proportional to their abundance | | | |
| 14. | Identify the correct option with same empirical formula for both compounds: | | D | Intro to Fundamental Concepts of Chemistry (Basic Concepts/ Empirical Formula) | Hard |
| | a. | H ₂ O & H ₂ O ₂ | | | |
| | b. | C ₆ H ₁₂ & C ₆ H ₆ | | | |
| | c. | H ₂ S ₂ O ₃ & H ₂ SO ₄ | | | |
| | d. | C ₆ H ₁₂ O ₆ & CH ₃ COOH | | | |
| 15. | 1 mole of any substance contains _____ particles. | | A | Intro to Fundamental Concepts of Chemistry (Moles) | Easy |
| | a. | 6.02 x 10 ²³ | | | |
| | b. | 6.02 x 10 ²⁴ | | | |
| | c. | 6.02 x 10 ²² | | | |
| | d. | 3.01 x 10 ²³ | | | |
| 16. | Which of the following orbital will be filled first than 4p? | | C | Atomic structure (Quantum Numbers) | Moderate |
| | a. | 4s | | | |
| | b. | 2p | | | |
| | c. | 3d | | | |
| | d. | 1s | | | |

| | | | | | |
|------------|---|--|---|---|----------|
| 17. | When number of moles of reactants and products are equal in reversible reactions, which parameter would not affect at equilibrium? | | B | Chemical Equilibrium (Le-Chatelier's Principle) | Moderate |
| | a. | Temperature | | | |
| | b. | Pressure | | | |
| | c. | Volume | | | |
| | d. | Catalyst | | | |
| 18. | Ice floats on the surface of water due to: | | D | Solids (Molecular solids) | Easy |
| | a. | Larger bond length | | | |
| | b. | Cubic structure of ice | | | |
| | c. | Weak intermolecular forces | | | |
| | d. | Empty spaces in the structure of ice | | | |
| 19. | Acidic buffer consists of : | | B | Chemical Equilibrium (Acid base /Buffer solutions) | Moderate |
| | a. | Strong acid and salt of it with a weak base | | | |
| | b. | Weak acid and salt of it with a strong base | | | |
| | c. | Strong acid and salt of it with a strong base | | | |
| | d. | Weak acid and salt of it with a weak base | | | |
| 20. | The breakdown of a substance with current is: | | C | Electrochemistry | Easy |
| | a. | Thermolysis | | | |
| | b. | Catalysis | | | |
| | c. | Electrolysis | | | |
| | d. | Photolysis | | | |
| 21. | Which statement is incorrect regarding a chemical bond? | | D | Chemical Bonding (Energetics of Bond) | Moderate |
| | a. | Bond is formed by the overlapping of half filled orbitals | | | |
| | b. | Bond is formed by the attraction of positive and negative ions | | | |
| | c. | Bond is formed by the overlapping of "s" orbital is strong | | | |
| | d. | Bond formed by the large sized atoms is strong | | | |

PHYSICS

| | | | | | |
|------------|--|--------------------------|---|--|----------|
| | | | | | |
| 22. | The product of force and time is equal to: | | C | Force and motion (Linear momentum) | Easy |
| | a. | Angular momentum | | | |
| | b. | Force | | | |
| | c. | Change in momentum | | | |
| | d. | Velocity | | | |
| 23. | Kilowatt-hour is unit of? | | A | Work and Energy | Moderate |
| | a. | Electric Energy | | | |
| | b. | Power | | | |
| | c. | Momentum | | | |
| | d. | Torque | | | |
| 24. | Trough of a wave acts as: | | A | Waves / Trough | Moderate |
| | a. | Concave lens | | | |
| | b. | Convex lens | | | |
| | c. | Convex mirror | | | |
| | d. | Plane mirror | | | |
| 25. | Two positive point charges are placed 2m apart. The electric potential at mid point due to these two charges will be: | | A | Electrostatic / Electric potential | Moderate |
| | a. | Added to double | | | |
| | b. | Reduced to half | | | |
| | c. | Remains same (no effect) | | | |
| | d. | Cancel each other effect | | | |
| 26. | If length of the wire becomes two times to its original value and area becomes one half to its original value, then resistance of the wire becomes: | | B | Current Electricity (Resistivity and its dependence upon temperature) | Hard |
| | a. | Double | | | |
| | b. | Four times | | | |
| | c. | One half | | | |

| | | | | | |
|--|----|------------|--|--|--|
| | d. | One fourth | | | |
|--|----|------------|--|--|--|

| | | | | | |
|------------|--|---------------|---|--------------------------------|------|
| 27. | The conversion of alternating current into direct current is: | | B | Electronics (Rectification) | Easy |
| | a. | Amplification | | | |
| | b. | Rectification | | | |
| | c. | Oscillation | | | |
| | d. | Resonance | | | |
| | | | | | |

ENGLISH

| | | | | | |
|------------|-----------------------------------|---|---|---------------------------|----------|
| 28. | Choose the correct option. | | A | Subject verb agreement | Moderate |
| | a. | The Three Musketeers was written by Dumas. | | | |
| | b. | The Three Musketeers were written by Dumas. | | | |
| | c. | The Three Musketeers has written by Dumas. | | | |
| | d. | The Three Musketeers have written by Dumas. | | | |
| | | | | | |

| | | | | | |
|------------|--|------------|---|------------|------|
| 29. | What is the antonym of “Mumbled”? | | C | Vocabulary | Easy |
| | a. | Unprovoked | | | |
| | b. | Quiver | | | |
| | c. | Loud | | | |
| | d. | Rarely | | | |
| | | | | | |

| | | | | | |
|------------|-----------------------------------|--------------------------------------|---|--------------------|------|
| 30. | Select the right sentence. | | A | Sentence structure | Hard |
| | a. | He opened the square red wooden box. | | | |
| | b. | He opened the red square wooden box. | | | |
| | c. | He opened the wooden red square box. | | | |
| | d. | He opened the red wooden square box. | | | |
| | | | | | |