

SKD Talent Search Exam

CLASS - X

2021

INSTRUCTIONS

MAXIMUM MARKS : 160

SET - 1

TIME : 1:30 HR.

- Use BLACK PEN ONLY to darken the appropriate circle.
- There are 40 questions carrying Four marks each. There shall be no -ve marking. Answer with no response will be awarded zero mark.
- Darken ONLY ONE CIRCLE for each question.
- Mark your answer in the circle corresponding to the Question being answered.
- Do not put any stray marks on the answer sheet.
- Do not erase any given answer by eraser.
- No Mobile phones are permitted inside the examination hall. Possession of mobile phones even in switched-off mode will be treated as use of unfair-means and will be dealt accordingly.
- Use of calculators, tablet, calculator watches, papers etc. are not permitted unless otherwise specified.

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PHYSICS

01. When a 40 V battery is connected across an unknown resistor there is a current of 100 mA in the circuit. Find the value of the resistance of the resistor:
(1) 5000 Ω (2) 800 Ω
(3) 0.8 Ω (4) none of these
02. A battery of 6V is connected in series with resistors of 0.1 ohm, 0.15 ohm, 0.2 ohm, 0.25 ohm and 6 ohm. How much current would flow through the 0.2 ohm resistor?
(1) 0.895A (2) 2.22A
(3) 1A (4) none of these
03. Point to be kept in mind for verification of Ohm's Law is:
(1) Ammeter and voltmeter should be connected in series
(2) Ammeter should be connected in series and voltmeter in parallel
(3) Ammeter should be connected in parallel and voltmeter in series
(4) Ammeter and voltmeter should be connected in parallel
04. Image formed by plane mirror is
(1) Real and erect (2) Real and inverted
(3) Virtual and erect (4) Virtual and inverted
05. Focal length of plane mirror is
(1) At infinity (2) Zero
(3) Negative (4) None of these
06. Who has stated the Right hand Thumb Rule?
(1) Orsted (2) Fleming
(3) Einstein (4) Maxwell

07. A ball is dropped from a height of 10 m.
(1) Its potential energy increases and kinetic energy decreases during the fall
(2) Its potential energy is equal to the kinetic energy during the fall.
(3) The potential energy decreases and the kinetic energy increases during the fall.
(4) The potential energy
08. According to the third law of motion, action and reaction
(1) always act on the same body
(2) always act on different bodies in opposite directions
(3) have same magnitude and direction
(4) act on either body at normal to each other
09. The value of acceleration due to gravity
(1) is least on equator
(2) is least on poles
(3) is same on equator and poles
(4) increases from pole to equator
10. The numerical ratio of displacement to distance covered by a moving object is
(1) always less than 1 (2) always equal to 1
(3) always more than 1 (4) equal or less than 1

CHEMISTRY

11. When 180 g of glucose is subjected to combustion, the volume of CO₂ liberated at STP is
(1) 22.4L (2) 67.2L
(3) 44L (4) 134.4L

ROUGH WORK

12. Which of the following sets of quantum numbers is correct for an electron in 3d orbital ?
 (1) 3, 0, 0, +½ (2) 3, 1, 1, -½
 (3) 3, 2, 1, +½ (4) 3, 2, 3, -½

13. The total number of elements present in the 6th period is
 (1) 18 (2) 31 (3) 32 (4) 17

14. The number of sigma and pi bonds in benzene are
 (1) 6σ and 3π bonds (2) 12σ and 3π bonds
 (3) 9σ and 3π bonds (4) 6σ and 6π bonds

15. Among the following molecules, p-p overlap takes place in
 (1) H₂ (2) BeCl₂
 (3) F₂ (4) HF

16. According to Lewis theory, neutralisation is the
 (1) transfer of proton from acid to base
 (2) transfer of proton from base to acid
 (3) transfer of electron pair from acid to base
 (4) transfer of electron pair from base to acid

17. Which of the following pH values at 25°C corresponds to the strongest acid ?
 (1) 2 (2) 4 (3) 6 (4) 8

18. Which among the following reactions is an example of instantaneous reaction under normal conditions?
 (1) 2H₂ + O₂ → 2H₂O
 (2) N₂ + O₂ → 2NO
 (3) NaOH + HCl → NaCl + H₂O
 (4) C₁₂H₂₂O₁₁ + H₂O → C₆H₁₂O₆ + C₆H₁₂O₆

19. Which of the following hydrocarbons can decolourise the alkaline potassium permanganate solution?
 (1) C₂H₆ (2) C₃H₈
 (3) C₅H₁₂ (4) C₃H₆

20. Complete hydrogenation of ethyne gives
 (1) ethane (2) ethene
 (3) methane (4) none of these

21. Which of the following does not shows any molecular movement
 (1) Bacteria (2) Protozoan
 (3) Virus (4) Algae

22. Which types of movement occurs all along the gut?
 (1) Saltatory movement (2) Peristaltic movement
 (3) Ciliary movement (4) Amoeboid movement

23. Oxygen is carried by
 (1) Erythrocytes (2) Leucocytes
 (3) Thrombocytes (4) None of these

24. 'Hypertension' is caused by
 (1) Constriction of veins
 (2) Constriction of nerve
 (3) Constriction of arterioles
 (4) Constriction of muscles

25. Which of the following is/are a contraceptive device
 (1) Loop (2) Copper - T
 (3) Condoms (4) All of these

26. Action of enzyme "pepsin" is facilitated by
 (1) Vitamins (2) HCL
 (3) Na⁺ (4) K⁺

27. Trypsin is present in
 (1) Salivary juice (2) Pancreatic juice
 (3) Gastric juice (4) Intestined juice

28. A balloon like structure of respiratory system is
 (1) Alveoli (2) Bronchi
 (3) Bronchiole (4) Larynx

29. The fertilized egg is
 (1) Ova (2) Zygote
 (3) Embryo (4) Placenta

30. A sexually transmitted disease is
 (1) Syphilis (2) Cholera
 (3) Diptheria (4) Tetanus

ROUGH WORK

31. Which of the following is a gaseous phytohormone?
 (1) ABA (2) Ethylene
 (2) Kinetin (4) IAA
32. In glycolysis, the end product is
 (1) Protein is converted to glucose
 (2) Glucose is converted into fructose
 (3) Starch is converted into glucose
 (4) Glucose is converted into pyruvic acid
33. Which of the following equations can be more appropriate for photosynthesis ?
 (1) $6\text{CO}_2 + 6\text{H}_2\text{O} \xrightarrow[\text{Chlorophyll}]{\text{Light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
 (2) $6\text{CO}_2 + 12\text{H}_2\text{O} \xrightarrow[\text{Chlorophyll}]{\text{Light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{H}_2\text{O}_2 + 6\text{O}_2$
 (3) $12\text{CO}_2 + 6\text{H}_2\text{O} \xrightarrow[\text{Chlorophyll}]{\text{Light}} 2\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
 (4) None of the above
34. Nitrogen is essential component of
 (1) Carbohydrates (2) Fats
 (3) Proteins (4) Oils
35. Which essential elements are components of biomolecules and hence they are structural elements of cells ?
 (1) Carbon, hydrogen, oxygen and nitrogen
 (2) Magnesium and phosphorus
 (3) Potassium and nitrogen
 (4) Carbon, hydrogen, Magnesium

36. The diffusion rates depend on
 (1) Gradient of concentration
 (2) Permeability of membrane
 (3) Temperature
 (4) All these factors
37. Transport of water and minerals through the xylem is
 (1) Unidirectional (2) Bidirectional
 (3) Multidirectional (4) All are correct
38. Chlorophyll 'a' and 'b' shows maximum absorption in
 (1) Blue region
 (2) Red region
 (3) Blue and red regions
 (4) Yellow and violet regions
39. Light reaction of photosynthesis takes place in
 (1) Grana (2) Stroma
 (3) ER (4) Cytoplasm
40. Glycolysis takes place in
 (1) Mitochondria
 (2) Cytoplasm
 (3) Both mitochondria and cytoplasm
 (4) Vacuole

ROUGH WORK