

Date of Examination



No of Questions	xx
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GENERAL SIR JOHN KOTELAWALA DEFENCE UNIVERSITY
SELECTION TEST FOR THE ENROLLMENT OF DAY SCHOLARS – INTAKE 39

BSc. in Engineering Degree Programme
SUBJECT RELATED KNOWLEDGE
(MODEL PAPER)

Instructions:

Answer all questions

Mark the correct answers on MCQ answer sheet, which is provided

Duration:

-
- How long is an IPv4 address?
a. 32 bits- b. 128 bytes c. 64 bits d. 128 bits
 - Electrons in the outer orbit are called
a. Waves b. Nuclei c. Shells d. Valences
 - ML^2T^{-2} is the dimensional formula for
a. Moment of inertia
b. Pressure
c. Elasticity
d. Couple acting on a body
 - How should a fuse be installed in a circuit to insure proper operation?
a. Parallel to the load
b. Series with the load
c. In any way possible
d. At the ground point
 - If n is an odd integer, which of the following must be an odd integer
a. $n - 1$ b. $n + 1$ c. $3n + 1$ d. $4n + 1$
 - A body is projected vertically upwards. The times corresponding to height h while ascending and while descending are t_1 and t_2 respectively. The velocity of projection is (g is acceleration due to gravity)
a. $g\sqrt{t_1 t_2}$ b. $\frac{g\sqrt{t_1 t_2}}{2}$ c. $\frac{g(t_1 + t_2)}{2}$ d. $\frac{gt_1 t_2}{t_1 + t_2}$

7. $\text{H}_2\text{S}_{(g)}$ reacts with $\text{O}_{2(g)}$ to give only water vapour ($\text{H}_2\text{O}_{(g)}$) and $\text{SO}_{2(g)}$, as products. When 4 dm^3 of $\text{H}_2\text{S}_{(g)}$ reacts with 10 dm^3 of $\text{O}_{2(g)}$ at a constant pressure and 250°C , the final volume of the mixture is,
- a. 6 dm^3 b. 8 dm^3 c. 10 dm^3 d. 12 dm^3
8. The enthalpy change of vaporization and the entropy change of vaporization of a liquid are, $45.00 \text{ kJ mol}^{-1}$ and $90.0 \text{ J K}^{-1} \text{ mol}^{-1}$ respectively. The boiling point of the liquid is,
- a. 227°C b. 62.7°C c. 45°C d. 100°C
9. Identify the wrong statement in the following
- a. Atomic radius of the elements increases as one moves down the first group of the periodic table
- b. Atomic radius of the elements decreases as one moves across from left to right in the 2nd period of the periodic table
- c. Amongst isoelectronic species, smaller the positive charge on the cation, smaller is the ionic radius
- d. Amongst isoelectronic species, greater the negative charge on the anion, larger is the ionic radius
10. Radii of capillary tubes of two mercury-in-glass thermometers A and B having equal r volumes of mercury inside their bulbs are r and $\frac{r}{3}$ respectively. When the temperatures of the bulbs are increased by 1°C , the ratio
- Change in length of mercury in column A _____ is approximately, (Neglect expansion of glass)
- Change in length of mercury in column B _____
- a. $\frac{1}{9}$ b. $\frac{1}{3}$ c. 1 d. 9

End of the Question Paper **There**
will be 25 questions for the paper.

