



KLEEE 2023 Model Question Paper for B.Tech. (Mathematics, Physics, Chemistry)

Particulars	Details
Number of Sections	3 (Mathematics, Physics , and Chemistry)
Total Number of Questions	75 Mathematics – 25 out of 30 Questions Physics –25 out of 30 Questions Chemistry –25 out of 30 Questions
Duration	3 Hours
Type of Questions	Multiple Choice Questions
Weightage	- All Questions carry equal marks - No negative marks

- For other state students each section contains 25 Questions out of which 20 are objective and 5 are filling the blanks. There is no choice and no negative marks.

Mathematics

Q1. A man is walking on a straight line. The arithmetic mean of the reciprocals of the intercepts of this line on the coordinate axes is $1/4$. Three stones A, B and C are placed at the points (1,1),(2,2), and (4,4) respectively. Then which of these stones is/are on the path of the man?

- B only
- A only
- the three
- C only

Q2. Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be defined as $f(x) = 2x-1$ and $g : \mathbb{R} - \{1\} \rightarrow \mathbb{R}$ be defined as $g(x) = (x-1/2)/(x-1)$. Then the composition function $f(g(x))$ is:

- Both one-one and onto
- onto but not one-one
- Neither one-one nor onto
- one-one but not onto

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Q30. The function $f(x) = (4x^3 - 3x^2)/6 - 2\sin x + (2x - 1)\cos x$:

- increases in $[1/2, \infty)$
- decreases $(-\infty, 1/2]$
- increases in $(-\infty, 1/2]$
- decreases $[1/2, \infty)$

Physics

Q31. Consider two satellites S1 and S2 with periods of revolution 1 hr and 8 hr respectively revolving around a planet in circular orbits. The ratio of angular velocity of satellite S1 to the angular velocity of satellite S2 is

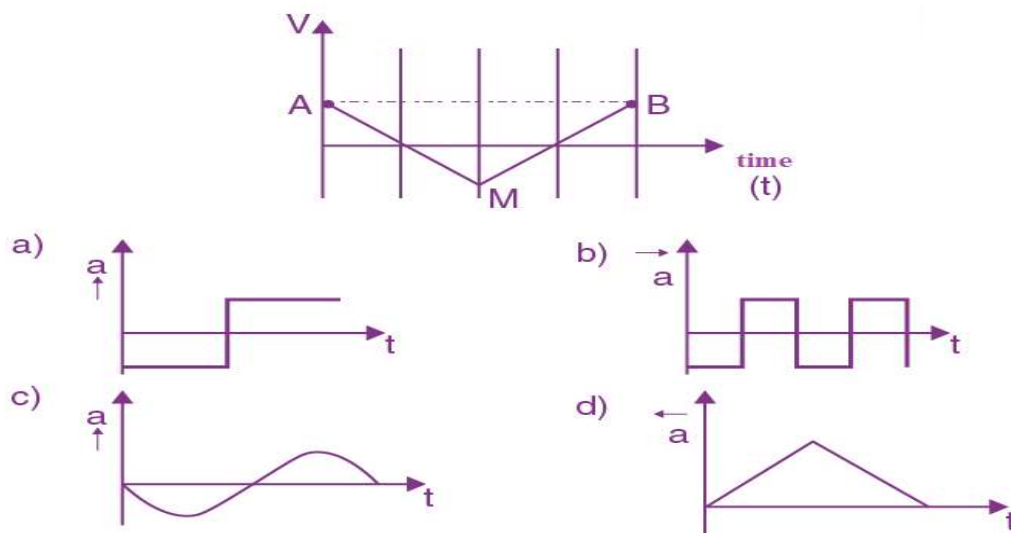
- a. 8: 1
- b. 1: 8
- c. 2: 1
- d. 1: 4

Q32. Two equal capacitors are first connected in series and then in parallel. The ratio of the equivalent capacities in the two cases will be

- a. 2: 1
- b. 1: 4
- c. 4: 1
- d. 1: 2

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Q60. If the velocity-time graph has the shape AMB, what would be the shape of the corresponding acceleration-time graph?



Chemistry

Q61. Which force is responsible for the stacking of the α -helix structure of protein? Hydrogen (1H, 2H, 3H) is _____.

- a. H-bond
- b. Ionic bond
- c. Covalent bond
- d. Van der Waals forces

Q62. The gas evolved due to anaerobic degradation of vegetation causes:

- a. Global warming and cancer
- a. Global warming and cancer
- b. Acid rain
- c. Ozone hole
- d. Metal corrosion

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Q90. Identify the major product:

