



**KLEEE 2022 Model Question Paper for B.Tech.  
(Mathematics, Physics, Chemistry)**

Particulars	Details
Number of Sections	<b>3</b> (Mathematics, Physics , and Chemistry)
Total Number of Questions	<b>75</b> 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	<ul style="list-style-type: none"><li>All Questions carry equal marks</li><li>No negative marks</li></ul>

- 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?

- a. B only
- b. A only
- c. the three
- d. 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:

- a. Both one-one and onto
- b. onto but not one-one
- c. Neither one-one nor onto
- d. one-one but not onto

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

- a. increases in  $[1/2, \infty)$
- b. decreases  $(-\infty, 1/2]$
- c. increases in  $(-\infty, 1/2]$
- d. 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

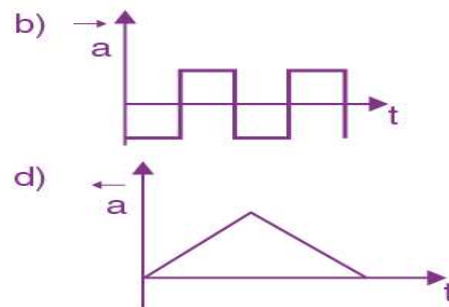
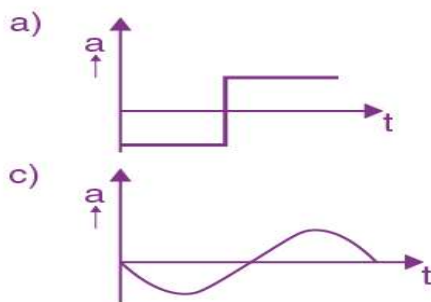
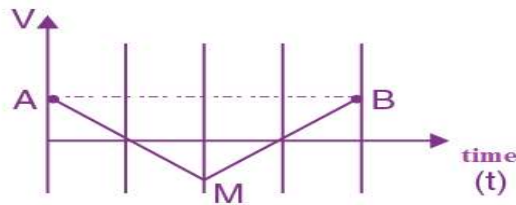
- a. 8: 1
- b. 1: 8
- c. 2: 1
- d. 1: 4

**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  $\alpha$ -helix structure of protein? Hydrogen (1H, 2H, 3H) is \_\_\_\_\_.

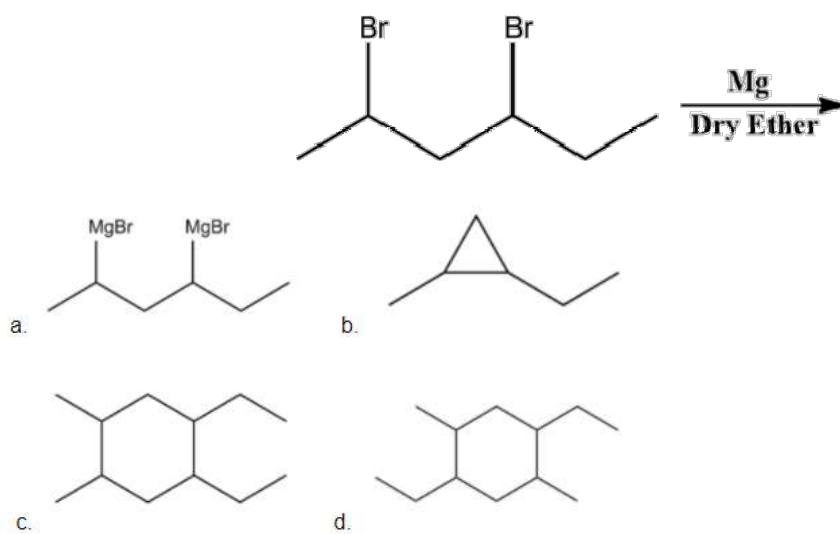
- a. H-bond
- b. Ionic bond
- c. Covalent bond
- d. Van der Waals forces

**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:



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