

Syllabus for TS EAMCET 2019-E Stream (Engineering Stream)

MODEL QUESTIONS – PHYSICS

- A particle starts from origin at $t=0$ with a velocity of $10 \hat{i}$ m/s and moves in x-y plane under the action of force which produces a constant acceleration of $(2\hat{i} + 3\hat{j})$ m/s². The y – coordinate of the particle at the instant its x-coordinate becomes 24m
(1) 12m (2) 6m (3) 18m (4) 3m
- When 0.2 kg of ice at 0° C mixed with 0.5 kg of water at 60° C in a container, the resulting temperature is 10° C. The heat of fusion of ice ($S_{\text{water}} = 4186$ J/kg/K)
(1) 1.31×10^5 J/kg (2) 2.62×10^5 J/kg
(3) 10.46×10^5 J/kg (4) 5.23×10^5 J/kg
- Statement (A): When Zener diode is connected in reverse bias it acts as a voltage regulator.
Statement (B): Photodiode is operated in reverse biased condition.
Statement (C): No external bias is applied to the solar cell.
(1) A, B, C are TRUE (2) Only A & C are TRUE
(3) Only A & B are TRUE (4) Only B & C are TRUE
- A solenoid of length 1.0m has a radius of 1cm and is made up of 1000 turns. It carries a current of 2.5 A. The magnitude of the magnetic field inside the solenoid in Tesla is
(1) $\pi \times 10^{-3}$ (2) $\pi \times 10^{-4}$ (3) $\pi \times 10^{-6}$ (4) $\pi \times 10^{-5}$
- Assertion: Artificial satellite does not require any fuel while it revolves around the earth's orbit.
Reason: Earth provides the necessary centripetal force for the satellite to move in its orbit.
(1) Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
(2) Both Assertion and Reason are true But Reason is not the correct explanation of Assertion.
(3) Assertion is true but Reason is false
(4) Both Assertion and Reason are false
- Match the following physical quantities with their correct dimensional formula

| List-I | List-II |
|---|------------------------------|
| (a) Gravitational constant | (i) $M^1 L^2 T^{-1}$ |
| (b) Angular Momentum | (ii) $M^1 L^1 T^{-3} K^{-1}$ |
| (c) Coefficient of thermal conductivity | (iii) $M^{-1} L^3 T^{-2}$ |
| (d) Power of lense | (iv) $M^0 L^1 T^0$ |

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|-----|-------|------|-------|------|
| (1) | (a) | (b) | (c) | (d) |
| (2) | (ii) | (i) | (iii) | (iv) |
| | (iii) | (ii) | (iv) | (i) |