S. B. Roll. No.....

APPLIED PHYSICS-I

1st Exam/Common/2355/0351/5403/Jun'2021

Duration: 1.15Hrs. **M.Marks:25**

SECTION-A

Q1. Attempt any three questions. **3x5=15**

i. What do you mean by banking of roads? What is banking angle?
ii. State principle of Homogeneity of dimensions.
iii. If $\vec{A}= \hat{\imath} - 2\hat{\jmath} +3\hat{k}$ & $\vec{B} = 4\hat{\imath} + 5\hat{\jmath}$. Find $\vec{A}X\vec{B}$
iv. What is Echo? What is the minimum distance for an echo to be heard?
v. Why do we slip on a rainy day?
vi. State theorem on perpendicular axis.
vii. What do you mean by streamline flow & turbulent flow?

SECTION-B

Q2. Attempt any one question. **1x10=10**

a. Show that for a freely falling body, total mechanical energy is constant.
b. State & prove law of conservation of linear momentum.
c. The orbital velocity v of a satellite may depend on its mass m, the distance r from the centre of earth & acceleration due to gravity g. Find the orbital velocity of satellite using method of dimensions.
d. What is SHM (Simple Harmonic Motion) ? Find the expression for displacement, velocity and acceleration in SHM.
e. State and prove Bernoulli's Theorem.

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APPLIED PHYSICS-I
1st Exam/Common/5752/Jun'2021
(For 2018 batch onwards)

Duration: 1.15Hrs. **M.Marks:25**

SECTION-A

Q1. Attempt any three questions. **3x5=15**

a. Write down six pairs of quantities having same dimensions.
b. Explain why it is easy to push a lawn roller than to pull it.
c. State and explain law of conservation of angular momentum with examples.
d. Write down 5 applications of centrifugal force.
e. Differentiate between heat and temperature.
f. Triple point of water is 273.16 K. Convert this value into C and F scales.

SECTION-B

Attempt any one question. **1x10=10**

Q2. Show that for a freely falling body, total mechanical energy remains constant.
Q3. a) Why friction is a necessary evil. Explain b) Convert 1 KWh into joules.
Q4. State and explain theorem of parallel axis with diagram.
Q5. State and explain Bernoulli's theorem. Write down its applications.