Roll no._____ ID: 200013/170013/120013/060033/030813

Semester:1st

Branch: Common

Subject Name: Applied Physics-I

Time Allowed : 3 Hrs. **MM: 100**

Section –A

Note: Multiple choice questions. All questions are compulsory. (10x1=10)

Q.1. The formula for scalar product is (CO2)
(a) ABSinθ (b) ABCosθ
(c) AB (d) None of these

Q.2. The dimensional formula for velocity is (CO1)
(a) $M^0L^1T^{-1}$ (b) $M^1L^1T^{-2}$
(c) $M^0L^1T^{-2}$ (d) $M^2L^1T^{-2}$

Q.3. The S.I. unit of stress is same as (CO5)
(a) Energy (b) Power
(c) Pressure (d) Frequency

Q.4. The energy due to motion is (CO3)
(a) Kinetic (b) Electrical
(c) Potential (d) Mechanical

Q.5. The formula for moment of inertia is (CO4)
(a) mr^2 (b) $1/2mr^2$
(c) $1/2m^2r^2$ (d) None of these

Q.6. Stress is directly proportional to strain is called (CO5)
(a) Newton's law (b) Hook's law
(c) Viscosity (d) None of these

Q.7. Which is not a mode of transfer of heat (CO6)
(a) Radiation (b) Reverberation
(c) Conduction (d) Convection

Q.8. The moment of inertia of hollow sphere is (CO4)
(a) $1/2mr^2$ (b) $2/3mr^2$
(c) $1/3mr^2$ (d) None of these

Q.9. The vector quantity has (CO2)
(a) Only direction (b) Only magnitude
(c) Both a and b (d) None of these

Q.10. 1 horse power is equal to (CO3)
(a) 546watts (b) 746watts
(c) 923watts (d) None of these

Section B

Note : Objective type questions. All questions are compulsory. (10x1=10)

Q.11. Define scalar quantity. (CO2)
Q.12. Write an example of zero work. (CO3)
Q.13. What is collinear vector. (CO2)
Q.14. What is the S.I. unit of viscosity? (CO5)
Q.15. What is angular momentum? (CO4)
Q.16. What is the dimensional formula of momentum? (CO1)
Q.17. What is the equation of continuity? (CO5)
Q.18. Write the formula of coefficient of linear expansion. (CO6)
Q.19. What is the full form of FPS in unit system? (CO1)
Q.20. Define power. (CO3)

Section – C

Note : Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21. What is the difference between fundamental and derived quantities? (CO1)
Q.22. What is positive and negative work? Give examples. (CO3)
Q.23. Explain moment of inertia with its physical significance. (CO4)
Q.24. What are the types of Thermometer? (CO6)
Q.25. Explain streamline and turbulent flow. (CO5)
Q.26. State and drive conservation of linear momentum. (CO2)
Q.27. What is stress? Explain it with its types. (CO5)
Q.28. Explain friction briefly. (CO3)
Q.29. What are the limitations of dimensional analysis? (CO1)
Q.30. Drive the relation between linear and angular velocity. (CO2)
Q.31. Write the difference between translatory and rotatory motion. (CO4)
Q.32. What are the different scales of temperature? (CO6)
Q.33. What is Bernoulli's theorem. Write its application. (CO5)
Q.34. Check the correctness of formula (CO1)
(a) $F=ma$ (b) $v=u+at$
Q.35. Explain impulse with its application. (CO5)

Section – D

Note : Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36. (i) Convert force of 10 newton into dyne using dimensional analysis. (CO1)
(ii) What is transformation of energy. Give examples. (CO3)
Q.37. (i) Explain banking of roads and drive its expression. (CO2)
(ii) What is the conservation of angular momentum? Give its examples. (CO4)
Q.38. (i) Explain different types of modulus of elasticity. (CO5)
(ii) Explain the concept of coefficient of thermal conductivity. (CO6)