



C16S-A/AA/CH/CHST/EI/MET/MNG/IT/
TT/PKG/C/CM/E-203

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BOARD DIPLOMA EXAMINATION, (C-16S)

MARCH / APRIL - 2019

II SEMESTER (COMMON) EXAMINATION

ENGINEERING PHYSICS - II

Time : 3 Hours]

[Total Marks : 80

PART - A

2×15=30

- Instructions :**
- (1) Answer any 15 questions.
 - (2) Each question carries 2 marks.
 - (3) Answer should be brief and straight to the point and shall not exceed five simple sentences.

- 1 Define friction.
- 2 List any two advantages of friction.
- 3 Define the terms :
(i) Work (ii) Power
- 4 Define potential energy and kinetic energy.
- 5 State work-energy theorem. Mention its mathematical expression.
- 6 Write any 2 examples of conservation of energy.
- 7 Define SFJM.

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[Contd...

- 8 A simple pendulum is of length 50 cm. Find its time period ($g = 10 \text{ m/s}^2$).
- 9 List any two examples of SHM.
- 10 State any two laws of simple pendulum.
- 11 Define beats.
- 12 Define Doppler Effect.
- 13 Define an echo.
- 14 State Hooke's law of elasticity.
- 15 Write the formula for surface tension based on capillarity.
- 16 Define viscosity.
- 17 State Ohm's law.
- 18 State Coulomb's inverse square law of magnetism.
- 19 A bar magnet of pole strength 60 Am has a length 20 cm. Find the magnetic momentum. <http://www.sbtetonline.com>
- 20 State Kirchoff's current law.

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PART - B

10×5=50

- Instructions :**
- (1) Answer any **FIVE** questions.
 - (2) Each question carries **TEN** marks.
 - (3) Answer should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 21 (a) State five laws of static friction. 5
- (b) Mention any five methods of reducing friction. 5
- 22 (a) State and prove law of conservation of energy in the case of freely falling body. 7
- (b) If 60 kg m/s is the momentum of the body of mass 0.6 kg find its kinetic energy. 3
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- 23 (a) Derive an expression for velocity and acceleration of a particle executing SHM. 6
- (b) A simple harmonic motion is given by the equation 4
- $$Y = 8 \sin \left(2\pi t + \frac{\pi}{4} \right) \text{ find}$$
- (i) Amplitude
 - (ii) Angular velocity
 - (iii) Time period
 - (iv) Phase
- 24 (a) Derive the expression for time period of a simple pendulum. 7
- (b) Calculate length of the seconds pendulum ($g=9.8 \text{ m/s}^2$). 3
- 25 (a) Define noise pollution. List any four effects of noise pollution. 6
- (b) List any four conditions of good auditorium. 4