



C14-A/AA/CH/CHST/AEI/FW/MET/MNG/
IT/TT/PKG/C/EC/EE/M/CM-103

4003

BOARD DIPLOMA EXAMINATION, (C-14)

MARCH / APRIL - 2019

FIRST YEAR (COMMON) EXAMINATION

ENGINEERING PHYSICS

Time : 3 Hours]

[Total Marks : 80

PART - A

4×10=40

- Instructions :**
- (1) Answer **ALL** questions.
 - (2) Each question carries **FOUR** marks (Two marks for each bit).
 - (3) Answer should be brief and straight to the point and shall not exceed five simple sentences.

- 1 (a) Define Dimensional formula .
(b) Write any two advantages of S.I. system.
- 2 (a) Define Vectors and give examples.
(b) Find the magnitude of the given vector $A = 2i + 3j - 4k$.
- 3 (a) Derive formula for Time of Ascent in case of Vertical Projection.
(b) A body is freely falling from height 19.6 m. Find the velocity on reaching ground.

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[Contd...

- 4 (a) Define Simple Harmonic Motion.
(b) A body executing S.H.M. is having displacement $Y = 10 \sin(4t)$ in metre. Find angular velocity and amplitude.
- 5 (a) State Boyle's law and write its limitation.
(b) Write any two differences between "R" and "r".
- 6 (a) Define Doppler effect.
(b) Write methods to reduce undesirable echoes.
- 7 (a) Write Poiseuille's equation for Viscosity and explain terms in it.
(b) State Hooke's law.
- 8 (a) Define Surface Tension and write its S.I. unit.
(b) Give any two applications of Capillarity.
- 9 (a) Define Ohmic conductors and Non- Ohmic conductors.
(b) Two magnetic poles each of strength 10 A- m separated in air by distance of 1m. Find magnetic force between them.
- 10 (a) State any two laws of Photo Electric effect.
(b) Write any two applications of Optical fibres.

PART - B

10×4=40

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

- 11** (a) State Parallelogram law of Vector addition and derive formulas for resultant vector both in magnitude and direction. **2+5**
- (b) If $F = (2i+3j+4k)$ N and $S = (i+j+k)$ m. Find the work done. **3**
- 12** (a) Show that path of Horizontal Projection is Parabola. **6**
- (b) Define oblique Projection and give two examples. **2+2**
- 13** (a) Define angle of friction and derive formula for it. **2+3**
- (b) Write advantages and dis-advantages of friction. **3+2**
- 14** (a) Define Potential Energy and derive formula for Potential Energy. **1+3**
- (b) Define Kinetic Energy and derive formula for Kinetic Energy. **1+5**
- 15** (a) Define Ideal Simple Pendulum and derive formula for time period of Simple Pendulum. **1+7**
- (b) If the length of simple pendulum is increased by four times, find how the time period changes ? **2**

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| 16 | (a) Derive Ideal Gas equation. | 6 |
| | (b) Write any four differences between Isothermal and Adiabatic process. | 4 |
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| 17 | (a) Define Noise pollution. Mention methods to control noise pollution. | 2+4 |
| | (b) Write conditions for good Auditorium. | 4 |
| | | |
| 18 | (a) Derive wheatstone's bridge principle. | 6 |
| | (b) Define Uniform Magnetic field and Non Uniform Magnetic field. | 4 |

