

(2)

- (b) What are different methods to reduce friction ?
Explain briefly. 5
- (c) Define coefficient of friction and state laws
of limiting friction. 2 + 5
3. (a) How particles of a medium vibrate in transverse
wave and longitudinal wave motion ? 2
- (b) Distinguish between progressive wave and
stationary wave. 5
- (c) What is Doppler's effect ? Find an expression
for source at rest and listener in motion. 2 + 5
4. (a) Write the formula for refractive index of a
prism. 2
- (b) Define total internal reflection with diagram. 5
- (c) Explain simple harmonic motion as
projection of uniform circular motion. 7
5. (a) Define Mechanical Equivalent of Heat. 2

(3)

- (b) A piece of copper wire has a length of
10 m at 0°C. Find its length at 100°C.
Given $\alpha = 51 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$. 5
- (c) Define C_p and C_v and obtain a relation
between them. 2 + 5
6. (a) What will be the resultant capacity, when 5
capacitors of 2 mF are connected in series ? 2
- (b) State Kirchhoff's laws. 5
- (c) State Biot Savart's law and express it in vector
form. Write down the expression for
magnetic flux density at the centre of a
circular coil. 7
7. (a) Write the properties of LASER. 2
- (b) State and explain Lenz's law. 5
- (c) What is photoelectric effect ? State the laws
of photoelectric emission. 2 + 5