

Solution- Sheet

Your NAME:

Your ROLL NUMBER:

Part-I : Each from Q.1 to Q.20 carries 1 mark

Put the correct option (i.e. *a*, *b*, *c* or *d*) in the box against each Question:

- | | | | | |
|---|---|---|---|---|
| 1. c | 2. a | 3. c | 4. b | 5. b |
| 6. b | 7. d | 8. a | 9. b | 10. a |
| 11. c | 12. d | 13. c | 14. b | 15. c |
| 16. b | 17. a | 18. c | 19. b | 20. b |

Part-II

1. (a)

$$T = \frac{1}{4} mg$$

1. (b)

$$I = \begin{pmatrix} 10 & 0 & 0 \\ 0 & 6 & -4 \\ 0 & -4 & 6 \end{pmatrix}$$

or

$$I_{xx} = 10, I_{xy} = 0 = I_{xz}$$

$$I_{yx} = 0, I_{yy} = 6, I_{yz} = -4$$

$$I_{zx} = 0, I_{zy} = -4, I_{zz} = 6$$

2.

$$l = \sqrt{\frac{M}{\kappa + Mg\ell}}$$