

Association of Physics Teachers
NATIONAL STANDARD EXAMINATION IN PHYSICS 2013- 2014

Date of Examination : 24th November 2013

Code - 135
Time 9.30 to 11.30 Hrs

ANSWER KEY

PART-A
SUB-PART A-1

- | | |
|----|---|
| 1 | c |
| 2 | d |
| 3 | c |
| 4 | a |
| 5 | a |
| 6 | b |
| 7 | c |
| 8 | d |
| 9 | d |
| 10 | b |
| 11 | c |
| 12 | d |
| 13 | a |
| 14 | b |
| 15 | b |
| 16 | a |
| 17 | b |
| 18 | a |
| 19 | b |
| 20 | c |
| 21 | c |
| 22 | d |
| 23 | b |
| 24 | b |

- | | |
|----|---|
| 25 | a |
| 26 | c |
| 27 | b |
| 28 | a |
| 29 | a |
| 30 | c |
| 31 | b |
| 32 | c |
| 33 | a |
| 34 | d |
| 35 | c |
| 36 | c |
| 37 | c |
| 38 | c |
| 39 | a |
| 40 | b |

SUB-PART A-2

- | | |
|----|------------|
| 41 | a, b |
| 42 | a |
| 43 | a, c, d |
| 44 | a, b, c, d |
| 45 | a, b, c, d |
| 46 | c |
| 47 | c, d |
| 48 | a, c |
| 49 | a, b, c |
| 50 | c, d |

PART-B

- | | |
|--|---------------------------|
| (i) $\frac{\alpha^2}{2}t$ | (ii) $\frac{\alpha^2}{2}$ |
| (iii) $\frac{u+v}{2} = \frac{\alpha\sqrt{s}}{2}$ | |
- | |
|--|
| (i) $\epsilon_r = \frac{\sin^2 \theta_1 \tan \theta_1}{\sin^2 \theta_1 \tan \theta_2} \left(\frac{\rho}{\rho - \sigma} \right)$ |
| (ii) $\epsilon_r = \frac{\rho}{\rho - \sigma}$ |
- | | |
|-----------|----------------|
| (a) 40 cm | (b) $\sqrt{2}$ |
|-----------|----------------|
- | |
|--|
| (a) $P_C = P_B = \frac{1}{2^{5/3}} \text{ atm,}$ |
| $T_B = (300) \left(\frac{1}{2} \right)^{2/3},$ |
| $T_C = \frac{1}{2} \left(\frac{300}{2^{2/3}} \right) \text{ K}$ |
| (b) $150 \left[1 - \frac{1}{2^{2/3}} \right] \text{ J,}$ |
| $W_{CA} = 0, W_{BC} = -\frac{100}{2^{5/3}} \text{ J}$ |
| (c) $\Delta Q = \frac{1}{2^{2/3}} [150 \times 2^{2/3} - 200]$ |
| = ΔW |
| (d) 0.233 |
- | |
|------------------|
| (a) 644 Ω |
| (c) 0.155 |
| (d) 207.36 sec. |