

SCHEME OF VALUATION
(Scoring Indicators)

| Revision :2015 Course Code: 1003 | | | | |
|---------------------------------------|---|-----------------|-----------|-------|
| Course Title : Engineering Physics II | | | | |
| Qst.No | Scoring Indicator | Split up score | Sub Total | Total |
| I | Part A | | | |
| 1. | Definition of SHM. Any two examples. | 1 1 | 2 | 10 |
| 2 | Definition of Stress and Strain Unit of stress and strain | 1 1 | 2 | |
| 3 | Any four advantages | 0.5 For each | 2 | |
| 4 | All harmonics are present in open pipes, the sound is richer in frequencies | 2 | 2 | |
| 5 | Definition of streamline and turbulent flow Mention critical velocity | 1 1 | 2 | |
| II | Part B | | | |
| 1 | Statement of Bernoulli's Theorem. Atomiser Figure Working of Atomiser | 2 2 2 | 6 | 6 |
| 2 | $V=u + at$, Retardation, $a = -2m/sec^2$ $V_2 = u^2 + 2aS$, Distance travelled $S = 400 m$ | 3 3 | 6 | 6 |
| 3 | Statement & figure Derivation | 2 4 | 6 | |
| 4 | Figure Derivation | 1 5 | 6 | 6 |
| 5 | $K = PV/v$ & substitution Ans $K = 9.37 \times 10^9 N/m^2$ | 4 2 | 6 | 6 |

| | | | | |
|-----|---|-----------------|---|---|
| 6 | Defintion Viscosity Derive $F = 6\pi r \eta v$ Explanation | 1 4 1 | 6 | 6 |
| 7 | Definition Ultrasonic waves Brief description of two methods of production Three applications | 1 3.5 1.5 | 6 | 6 |
| III | Part C | | | |
| a) | $S_n = u + a(n-1/2)$ Derivation | 3 | 3 | 3 |
| b) | Derivation | 6 | 6 | 6 |
| c) | Definition | 2 | 6 | 6 |
| | Derivation | 4 | | |
| IV | | | | |
| a) | Statement Derivation $F = ma$ | 1 2 | 3 | |
| b) | $S_n = U + a(n-1/2)$ $U = 7m/s$ & $a = 2m/s$ $S_{15} = 36m$ | 1 3 2 | 6 | 6 |
| c) | Equations of motion Derivation $P = \sqrt{2mE}$ | 3 3 | 6 | 6 |

| | | | | |
|------|---|-------------|---|---|
| V | | | | |
| a) | Definition | 1 | | |
| | Characteristics | 2 | 3 | 3 |
| b) | Statement of law | 2 | | |
| | Derivation | 4 | 6 | 6 |
| c) | Definition | 2 | | |
| | Condition for equilibrium - derivation | 4 | 6 | 6 |
| VI | | | | |
| a) | $P + Q = 31$ & $P - Q = 17$ | 1 | | |
| | $R = 25$ N | 2 | 3 | 3 |
| b) | Figure | 2 | | |
| | Equation $W = C \Theta$ | 4 | 6 | 6 |
| c) | Taking moments and conditions of equilibrium | 6 | | |
| | The scale has to be suspended at the 62 cm mark | | 6 | 6 |
| VII | | | | |
| a) | Discussion with equations | 3 | | |
| b) | $Y = FL/AI$ Substitution $F = 18 \times 10^6$ N | 2 2 2 | 6 | 6 |
| c) | Figure Derivation Inference | 1 3 2 | 6 | 6 |
| VIII | | | | |
| a) | Definition and equation for each | 3 | 3 | 3 |
| b) | $F = 6\pi \eta r v$ & explanation | 2 | | |
| c) | Derive the formula $v = 2r^2(\rho - d)g/9\eta$ | 4 | 6 | 6 |
| | Formula for terminal velocity | 1 | | |
| | $V_1/r_1^2 = v_2/r_2^2$ | 2 | | |
| | Terminal velocity of big drop is 9cm/s. | 3 | 6 | 6 |

| | | | | |
|----|--|---|---|---|
| IX | | | | |
| a) | $V_t = v_0 \sqrt{274/273}$ | 2 | | |
| | Ans 330.60m/s | 1 | 3 | 3 |
| b) | Figure | 2 | | |
| | Derivation | 4 | 6 | 6 |
| c) | Definition of free and forced vibration with explanation | 3 | | |
| | Explanation Resonance | 3 | 6 | 6 |
| X | | | | |
| a) | Three characteristics | 1 | | |
| | Derivation $v = f\lambda$ | 2 | 3 | 3 |
| | Figure | 2 | | |
| b) | Derivation and explanation | 4 | 6 | 6 |
| | Definition of stationary waves | 2 | | |
| c) | Characteristics | 2 | | |
| | End correction formula and explanation | 2 | 6 | 6 |