Q.22 Explain Young's Modulus and Bulk Modulus of Elasticity . (C0-4)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 What is banking of roads ? Derive an expression for angle of banking . (C0-2)

Q.24 Define kinetic energy. Derive an expression for kinetic energy of the body . (C0-3)

Q.25 a) Define Surface tension. What is effect of temperature on surface tension ? (C0-4)

b) Derive an expression for calculating the equivalent resistance when two resistors R_1 and R_2 are connected in parallel . (C0-8)

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1 st Year / Advance Diploma in Tool and Die Making
Subject:- Applied Physics

Time : 3Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 The dimensional formula of energy is_____. (C0-1)

a) $[M^1L^{-2}T^{-2}]$ b) $[M^1L^2T^{-3}]$

c) $[M^1L^{-1}T^{-2}]$ d) $[M^1L^2T^{-2}]$

Q.2 The S.I unit of power is_____. (C0-3)

a) Newton b) Joule

c) Watt d) Volt

Q.3 The value of 100°C on Kelvin scale _____. (C0-5)

a) 373K b) -273 K

c) 273K d) 372K

Q.4 Frequency range of audible sound is_____. (C0-6)

a) less than 20Hz b) Between 20 Hz to 20 kHz

c) Greater than 29 kHz d) None of the above

Q.5 The substances through which current can flow easily are called____. (C0-9)

a) Conductors b) Insulators

c) Semiconductors d) None of these

Q.6 The light source used in optical fibers is_____. (C0-10)

a) Laser b) electric lamp

c) torch d) lighter

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define Ohm's law. (C0-8)

Q.8 What is reflection of light ? (C0-7)

Q.9 Write full form of SONAR. (C0-6)

Q.10 Define conduction of heat transfer. (C0-5)

Q.11 State Pascal's law. (C0-4)

Q.12 Give formula of scalar product of two vectors.(C0-2)

SECTION-C

Note: Short answer type questions. Attempt any Eight questions out of ten questions. (8x4=32)

Q.13 State Newton's first law and third law of motion. Also give one example of each. (C0-2)

Q.14 Convert force of 01 newton into dyne using dimensional analysis . (C0-1)

Q.15 What is nano technology ? Write three applications of nano technology. (C0-10)

Q.16 Define paramagnetic and ferromagnetic materials with examples. (C0-9)

Q.17 Write four properties of electric lines of force.(C0-8)

Q.18 Write four uses of microscope. (C0-7)

Q.19 What are free, forced and resonant vibrations ? (C0-6)

Q.20 Write four differences between heat and temperature. (C0-5)

Q.21 Check the correctness of (C0-1)

a) $v - u + at$

b) $F = \frac{mv^2}{r}$

using dimensional analysis.