Total No. of Printed Pages :

EBS-102

B.E. (IInd Sem.) CGPA (Civil) Exam.- 2012

ENGINEERING PHYSICS

Paper - CE-202

Time Allowed : Three Hours

Maximum Marks : 50

Note : Attempt all questions. All questions carry equal marks.

Q. 1. Multiple choice questions : 2×5

(i) The condition for maxima in interference in thin film due to reflected light is :

(a) $2\mu t \cos r = (2n+1)\frac{\lambda}{4}$

(b) $2\mu t \cos r = 2n\lambda$

(c) $2\mu t \cos r = (2n+1)\frac{\lambda}{2}$

(d) $2\mu t \cos r = \left(\frac{3}{2}n+1\right)\frac{\lambda}{2}$

(ii) In a He-Ne laser, the radiation output is due to transition of :

(a) He atoms (b) Ne atoms

(c) O_2 atoms (d) Nd ions

(iii) In fusion reaction, the fuel is :

(a) Uranium

(b) Uranium and Cadmium

(c) Deuterium

(d) Deuterium and Tritium

(iv) The position of first and second principal point in a Ramsden eye piece from the field lens is at a distance of :

(a) 2f, – 2f (b) f/2, – f/2

(c) f/4, – 3f/2 (d) 3f/2, – f/4

(v) In superconductors, the resistivity is :

(a) Zero (b) Infinite

(c) Constant (d) None

Q. 2. (a) Deduce the resolving power of a grating.

(b) Write short note on Nicol prism.

Or

Derive the expression to obtain radius of curvature of lens in Newton's Ring experiment.

Q. III. Give construction and working of a Bragg's spectrometer.

Or

Discuss construction and working of a Ruby laser.

Q. IV. Discuss liquid drop model of a nucleus.

Or

Write short notes on :

(a) Cyclotron

(b) Critical size

Q. V. Discuss Huygen's eyepiece.

Or

Discuss cardinal points of a nodal slide experiment.

Q. VI. Discuss Ingen-Hauz experiment.

Or

Write short notes on :

(a) Stefan's law

(b) Josephson's effect in super conductivity.