

(E)

ni bozovashb pozitw tugus shuqiml jo tug 08 (a) .P
jo polikot lesoligo na adwig talaw jo shil n
dugiml jo shil n ni bozashb pozitw .q.e
ni tugus jo polikot shilashg shil n .m. 08
tugus shil jo yltug dugimlshg shil bini . q.d
(500)

MO

jo grukow bin polikotashg shil shil (d)
(500) .tashilashg shil shil n .tashilashg

bin shil n jo binashbshg shil shil (a) .2
shil shilashg . q . shil shil shil shil
shil n jo shil shil shil n jo shilashg
= , q . shil . A . 0002 jo shilashgshg . n . 100
(500) . 442.1 = , q . bin shilashg

MO

lesoligo jo binashbshg shil shil shil (d)
bin polikot shilashg , shil shilashg , polikot
(500) . q . shilashg lesoligo

050.8

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Roll No.

TPH-101

B. TECH. (FIRST SEMESTER) MID SEMESTER EXAMINATION, 2021-22

(All Branches)

ENGINEERING PHYSICS.

Time : 1 : 30 Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing
any *one* of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) Obtain an expression for fringe width in
case of Fresnel's biprism experiment.
Prove that in this case of interference dark
and bright bands are of equal width. (CO1)

OR

(b) The distance between two virtual images
of a slit formed by biprism is 0.3 mm. If
fringes of width 0.59 mm are formed on a
screen placed at a distance of 30 cm from
the slit, calculate the wavelength of the
light used. (CO1)

(2)

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2. (a) In Newton's ring arrangement a source is emitting two wavelengths $\lambda_1 = 6.0 \times 10^{-7}$ m and $\lambda_2 = 5.9 \times 10^{-7}$ m. It is found that n th dark ring due to one wavelength coincides with $(n + 1)$ th dark ring due to the other. Find the diameter of the n th dark ring if radius of curvature of the lens is 0.9 m.

(CO1)

OR

- (b) Describe Fraunhofer diffraction due to single slit and deduce the positions of the maxima and minima. Show the relative intensity of successive maxima. (CO1)

3. (a) A plane grating has 15000 lines per inch. Find the angle of separation of the 5048 Å and 5016 Å lines of helium in second order spectrum. (CO1)

OR

- (b) Explain phenomenon of double refraction. Describe the theory of double refraction with a suitable diagram. (CO2)

(3)

4. (a) 80 gm of impure sugar when dissolved in a litre of water gives an optical rotation of 9.9° when placed in a tube of length 20 cm. If the specific rotation of sugar is 66° , find the percentage purity of the sugar sample. (CO2)

OR

- (b) Give the construction and working of Laurent's half shade polarimeter. (CO2)

5. (a) What do you understand by a half and quarter wave plate? Calculate the thickness of a half wave plate of a quartz for a wavelength of 5000 Å. Here $\mu_e = 1.553$ and $\mu_o = 1.544$. (CO2)

OR

- (b) What do you understand by optical rotation, Malus' law, specific rotation and optical activity? (CO2)

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