2022

Physics
[HONOURS]
(CBCS)

(B.Sc. Third Semester End Examinations-2022)

PAPER-GE3P
(PRACTICAL)

Full Marks: 20   *Time: 02 Hrs*

The figures in the right hand margin indicate marks
Candidates are required to give their answers in their own words as
far as practicable
Illustrate the answers wherever necessary

The figure in the margin indicate the marks corresponding to the question.

Distribution of marks : Experiment : 15

LNB : 03

VIVA : 02

Perfor4m any one experiment

1. Measure the angle of the prism with the help of spectrometer.

   a) Working principle and ray diagram.   2+1

   b) Spectrometer Constant.   1

   c) Schuster's method of focussing (to be written   and implemented).   2

d) Data for angle of the prism   6

e) Calculation   2

f) Discussions   1

2. Determine the frequency of an obctric tuning fork by Melde's experiment.

    a) Working formula with Suitable experimental diagram.   4

    b) Data for calculation of frequency. (Take at least 7 different load)   8

    c) Calculation   2

    d) Discussions   1

3. Determine the refractive index of the material of a prism using sodium source.

    a) Working formula and ray diagram.   4

    b) Spectrometer Constant.   1

    c) Data for angle of prism.   4

    d) Data for minimum deviation position of the prism.   4

    e) Calculation   2

4. Determine the wave length of sodium light by Newton's ring experiment.

    a) Working formula and ray diagram   3

    b) Data for ring diameters(D_n) and calculation of D_n^2 (for at least five rings)   7

    c) Draw D_n^2 vs n Curve   3

    d) Calculation   2

5. To determine the co-efficient of viscosity of water by Capillary flow method (Poiseuille's Method) (supplied radius of tube)

    a) Working formula   2

    b) Measure volume of liquid for 5 minutes (Taking at bels four sets)   8

    c) Draw rate volume versus height curve.   3

    d) Calculate co-efficient of viscosity at room temperature.   1

    e) Accuracy   1

6. Determine Dispersive power and Resolving power of the plane transmission grating using sodium light and Hg source. ((Number of rulings per inch will be supplied)

    a) Working formula   2

    b) Levelling and adjustment of spectrometer for parallel rays   2

    c) Setting of grating surface for normal incident of light.   2

    d) Data for measuring the width of exposed grating surface to just resolve the wavelength of Na light (Two times)   4

    e) Data for finding the wave lengths of two unknown lines (for first - order only)   3

    f) Calculation   2

7. Determine the wave lengths of the sodium doublet lines using Michelson interferometer.

    a) Working formula and ray diagram   3

b) Data for calibration of mirror movement and find the correction factor.   4

c) Data for average sodium wavelength (steps per 10 fringer)

    4

d) Calculation   2

e) Error calculation   1

f) Discussion   1