TAMIL NADU OPEN UNIVERSITY

Chennai - 15

School of Science

Programme Code No	: 181
Programme Name	: B.Sc., Physics
Course Code & Name	: BPHY-11: Mechanics, Properties of Matter and Sound
Batch	: AY 2019-20
No.of Assignment	: One Assignment for Each 2 Credits
Maximum CIA Marks	: 25 (Average of Total no of Assignments)

ASSIGNMENT -I

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. To derive an expression for loss of Kinetic energy due to direct impact of two smooth spheres
2. What is mean by collision? Explain its types and derive an expression for the same
3. (i)Explain the term Projectile motion, (ii)Defne the term Friction. Explain limiting and static friction

ASSIGNMENT -II

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. To derive an expression for gravitational potential and field at a point due to a spherical shell
2. Explain how to calculate the Universal constant value by using Boy‟s Method.
3. To derive an expression for variation of “g” with latitude altitude and depth.

ASSIGNMENT -III

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Explain with necessary theory for young’s uniform and non-uniform bending.
2. Explain the principle, construction and working of Torsion pendulum
3. (i) Explain the term cantilever, (ii) Explain static torsion and its types

ASSIGNMENT -IV

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. What is Doppler effect? Explain it.
2. State and prove Bernoulli’s theorem
3. To derive an expression for surface tension of liquid using capilarity.

1. Date of Publication : 07.01.2020
2. Last date of submission of answer script by the student to the study centre /LSC : 05.04.2020
3. Last date of submission of marks by the examiner to the study centre/LSC : 12.04.2020
4. Last date of submission of marks by the study centre/LSCs to the office of C.O.E. on or before 25.04.2020

TAMIL NADU OPEN UNIVERSITY

Chennai - 15

School of Science

Programme Code No	: 181
Programme Name	: B.Sc., Physics
Course Code & Name	: BPHY-12: Optics and Spectroscopy
Batch	: AY 2019-20
No.of Assignment	: One Assignment for Each 2 Credits
Maximum CIA Marks	: 25 (Average of Total no of Assignments)

ASSIGNMENT -I

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. Derive an expression for combination of to produce deviation with out dispersion
2. Deduce the condition for minimum spherical aberration of two thin lenses- separated by a distance
3. Explain achromatic combination of lenses and derive the condition for achromatism of two thin lenses separated by a finite distance.

ASSIGNMENT -II

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. To derive an expression for thickness of thin flim due to interference of light.
2. Explain the construction and working of Michelson's Interferometer
3. Explain Fresnel and Fraunhofer diffraction in detail

ASSIGNMENT -III

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. What is meant by Plane Transmission grating? Give the necessory theory and derive an expression for wavelength of unknown sourcs.
2. Explain the following terms : (a)Brewster's law (b)Double refraction (c) Pile of plates
3. Explain the construction and working of astronomical telescope

ASSIGNMENT -IV

Answer any one of the question not exceeding 1000 words **Marks - 25**

1. What is Raman effect? Derive an expression for Raman shift with necessary theory
2. Derive an expression for Einstien's Coefficent for laser action
3. Explain UV rays and its types and applications

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School of Science

ASSIGNMENT

Programme Code No : 181
Programme Name : B.Sc., Physics
Course Code & Name : BPHYA-01, Differential Equations
Batch : AY 2019-20 – I Year
No.of Assignment : One Assignment for Each 2 Credits
Maximum CIA Marks : 25 (Average of Total No. of Assignments)

Assignment – I

Answer any one of the question not exceeding 1000 words Marks: 25

1. Solve: $x^2\frac{d^2y}{dx^2} + 3x\frac{dy}{dx} + y = \frac{1}{(1-x)^2}$

2. Solve by the method of variation of parameters.

   $\frac{d^2y}{dx^2}$ + 4 y = cosec 2x

3. (a) Solve : $(D^2 - 8D + 9)Y = 8\cos 5x$.

   (b) Solve : $(D^2 – 5D + 6)\ Y = x^2 – x + 2$

Assignment – II

Answer any one of the question not exceeding 1000 words Marks: 25

1. Solve: $x^2\frac{d^2y}{dx^2} - x\frac{dy}{dx} + y = \frac{\log x.\sin(\log x)+1}{X}$

2. Solve by the method of variation of parameters.

   $x^2\frac{d^2y}{dx^2} + x\frac{dy}{dx} - y = x^2e^x$

3. (a). Solve: $(D^2 - 4D + 3)Y = \sin 3x \cos 2x$.

   (b). Solve : $(D^2 – 2D + 4)\ Y = e^x \cos x$.

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