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SUBJECT CODE NO: - BNP-2562
FACULTY OF SCIENCE AND TECHNOLOGY
BSc. F.Y.(SEM-I)(CBCGS NEP) Physics
Examination November / December 2024
Physics Mechanics and Properties of Matter (DSC-1)

[Time: 1:00 Hours]**[Max. Marks:30]**

Please check whether you have got the right question paper.

N. B

1) Both PART A and PART B are compulsory.

2) Solve **any four** questions of PART B.

PART-A

Q.1 Multiple choice questions.**10**

1. The weight of a body is lesser at the surface of the moon than on the earth because _____.
 - a) Moon is far away from earth
 - b) Moon has no atmosphere
 - c) Moon is far away from sun.
 - d) The Value of g is less on moon
2. The gravitational potential at a point on the surface of earth is _____.
 - a) g
 - b) gR
 - c) $gR/2$
 - d) Zero
3. Shearing strain is given by
 - a) Deforming force
 - b) Shape of shear
 - c) Angle of shear
 - d) Change in volume of body
4. If by applying a force, the shape of a body is changed, then the corresponding stress is known as.....
 - a) Tensile stress
 - b) Bulk stress
 - c) Shearing stress
 - d) Compressive stress
5. If Velocity of liquid is less than Critical velocity then this flow is called _____.
 - a) Stream line
 - b) Gas flow
 - c) Water flow
 - d) Turbulent.

PART-B

Attempt any four questions from Q2. to Q7.

Q.2 State and explain the Newton's law of gravitations. 5

Q.3 The radius of earth is 6.37×10^{-8} cm, its mean density is 5.5 gm/cc and the gravitational constant is $G = 6.66 \times 10^{-8}$ C.G.S. unit. Calculate the earth's surface potential. 5

Q.4 Define the following terms. 5

- (i) Deformation
- (ii) Elasticity
- (iii) Stress
- (iv) Strain
- (v) Hook's Law



Q.5 A steel rod of circular cross section of radius 1 cm is rigidly fixed at one end and a load of 9 kg is at the other end which is 1000 mm from fixed end. Calculate depression of end. 5
Given: $Y = 20 \times 10^{11}$ dyne/cm².

Q.6 Write a short note on coefficient of viscosity. 5

Q.7 Define surface tension and explain it with example. 5