

B.Sc. FOOTWEAR TECHNOLOGY (BSCFWT)

Term-End Examination

June, 2015

00310

BFW-036 : APPLIED SCIENCE

Time : 3 hours

Maximum Marks : 70

Note : Attempt total seven questions. Minimum two questions from each part are to be done.

PART A

1. (a) What is the relationship between Mass, Volume and Density in a solid substance ?

(b) 5.7 gm of a solid substance occupies 1.2 cm^3 volume. Calculate its density. $2 \times 5 = 10$

2. (a) What is the relation between Work and Energy ? Explain by giving examples.

(b) What are kinetic energy and potential energy ? Discuss with the help of equations.

$2 \times 5 = 10$

3. (a) What are Vector and Scalar quantities ?
Write down which of the following is a
Vector and a Scalar quantity :

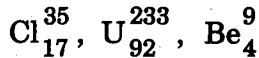
Volume, Mass, Speed, Acceleration,
Density, Angular Velocity.

- (b) Each cube side is measured to be 7.2 m.
Determine the area and volume of the cube.

$$2 \times 5 = 10$$

PART B

4. (a) Calculate the Molecular Mass of Glucose ($C_6H_{12}O_6$) molecule. (Atomic Mass of $C = 12, H = 1, O = 16$)
- (b) Calculate the Molecular Mass of Ammonia (NH_3). (Atomic Mass of $N = 14, H = 1$) $2 \times 5 = 10$
5. (a) Write down the Atomic Mass and Atomic Number of the following :



- (b) Where do electrons, protons and neutrons reside (lie) within an atom ? Explain by giving the example of Hydrogen. $2 \times 5 = 10$
6. (a) What are isotopes ? Discuss with examples.
- (b) Explain Dalton's Atomic Theory. $2 \times 5 = 10$

PART C

7. (a) By selling a book for ₹ 115.20, a man loses 10%. At what price should he sell it to gain 5% ?
- (b) When a commodity is sold for ₹ 34.80, there is a loss of 25%. What is the cost price of the commodity ? $2 \times 5 = 10$
8. (a) How many boxes each of which is 2 m long, 2.5 cm broad and 4 cm thick, can be cut off from a wooden block 6 m long, 15 cm broad and 40 cm thick ?
- (b) Convert 2500 sq feet into sq dm and 3000 sq metre into sq centimetre. $2 \times 5 = 10$
9. Solve the given equations : $2 \times 5 = 10$
- (a) $5x^2 + 16x + 3 = 0$
- (b) $x^2 + 8x + 5 = 0$
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