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BFW-036

B.Sc. FOOTWEAR TECHNOLOGY (BSCFWT)

Term-End Examination

00016

December, 2016

BFW-036 : APPLIED SCIENCE

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. All questions carry equal marks. Use of scientific calculator is allowed. Assume missing data suitably.*

1. What are the fundamental and derived units of measurement ? Convert one square meter into square decimeter and square kilometer. *10*

2. What is oxidation number ? Describe the modern concept of oxidation and reduction with the help of suitable examples. *10*

3. A piece of ice floats on water. What fraction of its volume will be above the surface of the water ? Take density of ice as 920 kg/m^3. *10*

4. Write the characteristics of d-block elements. *10*

5. A profit of 20% is made on goods when a discount of 10% is given on the marked price. What profit percentage will be made when a discount of 20% is given on the marked price ? *10*

6. Find the ratio of the volumes of a cube to that of the sphere which will fit inside the cube. *10*

7. The marks obtained by 20 students in a test are : *10*

13, 17, 11, 5, 18, 16, 11, 14, 13, 12, 18, 11, 9, 6, 8, 17, 21, 22, 7, 6.

Find :

(a) The mean marks per student.

(b) The mean marks per student if marks of each student is increased by 5.

(c) The mean marks per student if marks of each student is decreased by 2.

8. (a) Describe the seven fundamental units.

(b) Define displacement, speed, velocity and acceleration. Give their SI units. *5+5*

9. (a) An object moves in a circular path of radius 7 cm. It completes 7 rotations in 10 seconds. Find the angular speed and the total distance covered by the object.

(b) A ball is thrown upward with a speed of 10 m/s. If the acceleration due to gravity is 10 m/s^2, calculate the maximum height attained by the ball. *5+5*

10. (a) Describe hydrogen bonding with suitable examples.

(b) Differentiate between metals and non-metals with suitable examples. *5+5*