

B.Sc. FOOTWEAR TECHNOLOGY (BSCFWT)

Term-End Examination

June, 2013

BFW-036 : APPLIED SCIENCE

Time : 3 hours

Maximum Marks : 70

Note : The paper contains three groups. You have to attempt all groups.

GROUP - A

Mathematics

(Answer any four questions)

1. A farmer sold a cow and a calf for Rs. 760 and got a profit of 10% on the cow and 25% on the calf. If he sells the cow and the calf for Rs. 767.50 and gets a profit of 25% on the cow and 10% on the calf, find the individual cost price of the cow and the calf. 10

2. A sum of Rs. 2000 is lent out in two parts in such a way that the interest on one part at 10% for 5 years is equal to that on another part at 9% for 6 years. 10

3. A man borrows Rs. 3000 at 10% compound rate of interest. At the end of each year he pays back Rs. 1000. How much amount should he pay at the end of the third year to clear all his dues ? **10**
4. A person travelled 120 km by steamer, 450 km by train and 60 km by horse. It took 13 hours 30 minutes. If the rate of the train is 3 times that of the horse and 1.5 times that of the steamer, find the rate of the train per hour. **10**
5. A cylinder, a hemisphere and a cone stand on the same base and have the same heights. Then find the ratio of their volumes and also the ratio of the areas of their curved surface. **10**
6. (a) Distinguish amongst mean, mode and median. **3**
- (b) The following table shows the gain in weight by 25 children in a year. **7**

Gain in weight (in kg)	2	2.5	3	3.5	4	4.5	5	5.5	6
No. of children	2	3	4	2	5	1	4	3	1

Find the mean of gain in weight.

GROUP - B

Physics

(Answer *any three* questions)

1. Describe 7 fundamental units. 5

2. A piece of ice floats on water. What fraction of its volume will be above the surface of water ? Take the density of ice to be 920 kg/m^3 . 5

3. An object moves in a circular path of radius 7 cm. It completes its 7 rotation in 10 second. Find speed and total distance covered by the object. 5

4. (a) Describe Newton's laws of motion. 5
(b) A force of 100N acts on a mass of 20 kg at rest for a period of 10 seconds. Calculate the final velocity of the mass.

GROUP - C

Chemistry

(Answer *any three questions*)

1. State the differences between metals and non - metals with suitable examples. What is an alloy ? 5

 2. Write the characteristics of d - block elements. 5

 3. Distinguish between ionic and covalent bond with suitable examples. 5

 4. (a) Write electronic configuration of Fluorine (At. no-9) 5
(b) Explain Lanthanide series.
(c) What is isotope ?
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