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BFW - 036

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B.Sc. FOOTWEAR TECHNOLOGY (BSCFWT)

Term-End Examination

June, 2012

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) A producer of tea blends two varieties of tea from two tea gardens. One costs Rs. 40/kg and another costs Rs. 50/kg. If he sells at Rs. 55/kg the blended variety in the ratio of 5 : 3, what is then his gain in percent ? **2x5=10**

(b) A cardboard sheet of rectangular shape has dimensions of 60 cm x 40 cm. From each one of its corners a square of 8 cm is cut off. An open box is made of the remaining sheet. Find the volume of the box.

2. (a) The average of 11 results is 50. If the average of the first six results is 49 and that of last 6 is 52, find the 6^{th} result. **2x5=10**

(b) The value of a machine depreciates by 14% per year. If the present value of machine is Rs 36,980, find the value of the machine 2 years ago and 2 years after.

3. (a) After covering a distance of 30 kms. with uniform speed some defects occurs in a rail engine and hence the speed is reduced to 80% of its original speed. **2x5=10**

Consequently, the train reached its destination late by 45 minutes. Had it happen after 18 kilometers more the train would have reached 9 minutes earlier. Find the speed of the train and the distance of the journey.

(b) A car travels 25 km. One hour faster than a bus for a journey of 500 kms. The bus take 10 hours more than the car. Find the speed of car and bus.

4. Solve the following equations : **2x5=10**

(a) $(x-2)/3+4 = (x+4)/3$

(b) $(y-3)/7 = (y+4)/2$

5. Calculate the square root of following **2.5x4=10**

(a) 900 (b) 10

(c) 0.25 (d) 22

Group - B

Physics

Answer *any three*

6. (a) Describe Hooke's Law. 5

(b) Describe specific heat and latent heat. 5

(c) Describe Ohm's law. 5

(d) A ball is thrown upward with speed of 10 m/s. If acceleration due to gravity is 10 m/s^2, then calculate maximum height reached by the ball. 5

Group - C

Chemistry

Answer *any three*

7. (a) Write the difference between metals and non-metals. 5

   (b) Write the characteristics of d-block elements. 5

   (c) Write the difference between ionic and covalent bond. 5

   (d) Write electronic configuration of fluorine (Atomic No. = 9) 5