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BFW - 036

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B.Sc. FOOTWEAR TECHNOLOGY (BSCFWT)

Term-End Examination

December, 2013

BFW-036 : APPLIED SCIENCE

Time : 3 hours *Maximum Marks : 70*

GROUP - A

Mathematics

Answer **any four** questions :

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

2. A certain sum of money amounted to Rs. 575 at 5% in a time in which Rs. 750 amounted to Rs. 840 at 4% .If the rate of interest is simple, find the sum. **10**

3. Geeta deposit Rs. 20,000 in a private company at the rate of 16% compounded yearly; whereas Meera deposits an equal sum in PNB Housing Finance Ltd. at the rate of 15% compounded half yearly. If both deposit their money for $1\frac{1}{2}$ year only, calculate which deposit earns better interest. **10**

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

5. The marks obtained by 20 students in a test were 13, 17, 11, 5, 18, 16, 11, 14, 13, 12, 18, 11, 9, 6, 8, 17, 21, 22, 7, 6 . **10**

Find

(a) The mean marks per student

(b) The mean marks per student when marks of each student are increased by 5.

(c) The mean marks per student when the marks of each student are doubled.

6. A car travelled with a velocity of 40km/h from town A to town B and returned with a velocity of 60 km/h. What is the average velocity ? **10**

GROUP - B

Physics

Answer **any three** questions :

1. (a) State Hooke's law. **5**

(b) A 4.0m long copper wire of cross-sectional area $1.2cm^2$ is stretched by a force of $4.8 \times 10^3 N$. If the Young's modulus for copper is 1.2×10^{11} N/m^2, calculate

(i) the stress

(ii) the strain , and

(iii) increase in the length of the wire

2. (a) Define specific heat Q latent heat. **5**

(b) A copper calorimeter weighing 250gm is at temperature 20°C. When 50gm of water at 30°C is poured into the calorimeter cup, the temperature of the cup - water system becomes 26.8°C. Calculate the specific heat capacity of the cup.

3. (a) Explain Ohm's law. 5
(b) Three resistors 2Ω, 3Ω and 5Ω are combined in series and the combination is connected to a battery of 20Ω. Calculate the total resistance of the series combination and potential drop across each resistors. What would be the total resistance if the resistances are connected in parallel ?

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

GROUP - C
Chemistry

Answer **any three** questions :

1. (a) Describe hydrogen bonding with suitable example. 5
(b) What is innert gas ?

2. (a) Define polymerisation , monomer and polymer. 5
(b) What is copolymer ?

3. (a) Explain lone pair of electron. 5
(b) What are atomic number and mass number ?

4. Write down the IUPAC name of acetic. Also draw the structure of acetic acid. 5