BFW-036

B.Sc. FOOTWEAR TECHNOLOGY (BSCFWT)
Term-End Examination
June, 2016

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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. Explain Newton's law of motion with the help of suitable examples.   *10*

2. Write the characteristics of s-block elements.   *10*

3. Differentiate between pneumatic pressure and hydraulic pressure.   *10*

4. Define 'Mean', 'Median' and 'Mode'. Give the formula of each.   *10*

5. A farmer sold a cow and a calf for ₹ 760 and got a profit of 10% on the cow and 25% on the calf. If he sells the cow and the calf for ₹ 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**

6. A person travelled 120 km by steamer, 450 km by train and 60 km by horse. It took 13 hours and 30 minutes. If the speed of the train is 3 times that of the horse and 1·5 times that of the steamer, find the speed of the train. **10**

7. A cylinder, a hemisphere and a cone stand on the same base and have the same heights. Find the ratio of their volumes and the ratio of their curved surface areas. **10**

8. (a) State Hooke's law.

(b) A 4·0 m long copper wire of cross-sectional area 1·2 cm^2 is stretched by a force of 4·8 × 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) the increase in the length of the wire. **4+6**

9. (a) Explain Ohm's law.

(b) Three resistors, 2 Ω, 3 Ω, and 5 Ω are combined in series and the combination is connected to a battery of 20 V. Calculate the total resistance of the series combination and potential drop across each resistor. What would be the total resistance, if the three resistors are connected in parallel ?   *4+6*

10. (a) Define polymerisation, monomer and polymer.

(b) Describe lone pair of electrons.   *5+5*

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