# Lecture 4 Answers

1 ***Prime Cost*** of a product are all the direct costs added together. The direct costs are those costs which can be economically raced to a product.

***Product costs*** are those costs that are attached to the products and therefore included in the inventory (stock) valuation. The product cost will be:

Direct Materials X Direct Labour X Other Direct Expenses X Prime cost X Indirect production costs (overheads) X Product cost X

2. ***Period costs*** are non-manufacturing costs such as training, advertising and invoice (debt) collection. Period costs are *not* attached to the products and are *not* included in the inventory (stock) valuation. All period costs will be recorded as an expense in the current accounting period.

***Total cost = Product cost + period cost***

3. Plastic Direct materials

Wood Direct materials

Sundry materials used in production process Direct materials

Wages of factory staff Direct labour

Wages of office staff Other indirect costs

Depreciation of machinery Indirect production costs

Stationary expenses Other indirect costs

Electricity bill for factory Indirect production costs

Electricity bill for office Other indirect costs

Costs of delivery to customers Other indirect costs

The other indirect costs represent period costs and would not be included in the product cost.

4.(a) £

Direct Materials (45,000 + 5,000) 50,000 Direct labour 17,500 **Prime cost 67,500** Indirect production costs 3,500 **Product cost 71,000**

The Total Cost is the product cost plus the period costs. The period costs are the non-manufacturing overheads which are the office manager and indirect office costs (£1,800+£11,000 =£12,800).

Total cost = Product cost + Period cost

Total cost = £71,000 + £12,800 = £83,800

(b) The product cost of one T shirt that will be used for inventory valuation is £71,000/15,000 shirts = £4.73

5. ***Supervisors’ salaries***

Method of apportionment number of employees: £12,000/120 (total staff) = £100

***Machine Maintenance and repair***

Method of apportionment Machine value: £14,000/£200,000 = £0.07

***Factory rent and rates***

Method of apportionment: £15,000/10,000 sq metres =£1.50

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| --- | --- | --- | --- |
|  | Distance Glasses | Sunglasses | Total Overhead |
| Supervisors salary | (£100 x 80 employees)  **8,000** | (£100 X 40 employees)  **4,000** | **12,000** |
| Maintenance and repair | (£0.07 x 120,000)  **8,400** | (£0.07 X 80,000)  **5,600** | **14,000** |
| Factory rent and rates | (£1.50 X 7,500)  **11,250** | (£1.50 X 2,500)  **3,750** | **15,000** |
|  | **27,650** | **13,350** | **41,000** |

6. This question is similar to those in the lecture notes and power point slides. However the direct costs of the products also need to be calculated:

**Calculation of direct costs:**

Leisure Sleeping Bags Thermal Sleeping Bags

£ £ Direct Labour - Leisure (£8 x 3 hours) 24 Thermal (£8 x 5 hours) 40 Direct Materials (£5 x 4 metres) 20 20 Additional direct materials (£12 x 1.5 metres) 0 18 **Prime cost** 44 78

**Apportionment of production overheads to Departments**

Rent and rates The most appropriate basis for apportioning the rent is floor space. The total area is 7,000 square metres and the total overhead is £35,000.

The overhead per square metre = £35,000/7,000 =£5

Rent apportioned to Production Department 1 = 3,000 square metres x £5 = £15,000 Rent apportioned to Production Department 2 = 3,500 square metres x £5 = £17,500 Rent apportioned to Canteen = 500 square metres x £5 = £2,500 Total £35,000

Electricity

The most appropriate basis for apportioning the electricity is the value of plant. The total plant value is £285,000 and the total overhead is £80,000.

The overhead per £ of plant value £80,000/£320,000 = £0.25

Electricity apportioned to Production Department 1 = £120,000 x £0.25 = £30,000 Electricity apportioned to Production Department 2 = £200,000 x £0.25= £50,000 Electricity apportioned to Canteen £0 Total £80,000

The Results after the apportionment of costs to cost centres

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| --- | --- | --- | --- |
| **Overheads** | **Production Department 1** | **Production Department 2** | **Canteen** |
| **Rent** | 15,000 | 17,500 | 2,500 |
| **Electricity** | 30,000 | 50,000 | 0 |
| **Total** | **45,000** | **67,500** | **2,500** |

**Canteen costs**

The most appropriate basis for apportioning the canteen costs is on the number of workers in the two production departments. There are 55 employees in the production department and the costs that have been apportioned to the service centre are £2,500.

The canteen cost per employee is £2,500/55 = £45.45

Canteen costs apportioned to Production Department 1 = 25 x £45.45 = £1,136 Canteen costs apportioned to Production Department 2 = 30 x £45.45= £1,364 Total £2,500

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|  | **Production Department 1** | **Production Department 2** |
| **Apportioned overheads** | £45,000 | £67,500 |
| **Apportionment of canteen costs** | £1,136 | £1,364 |
| **Total overhead allocated to production departments** | **£46,136** | **£68,864** |

**Absorption of overheads to products**

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| --- | --- | --- |
|  | **Production Department 1** | **Production Department 2** |
| **Total Overhead** | £46,136 | £68,864 |
| **Number of units produced** | 1,800 | 2,200 |
| **Overhead per unit of product** | **£25.63** | **£31.30** |

**Product Cost** Leisure Thermal

Direct Labour £24.00 £40.00 Direct Material £20.00 £38.00 Total Direct costs £44.00 £78.00 Overhead £25.63 £31.30

Total product costs £69.63 £109.30

**7.**

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|  | **Production Department 1** | **Production Department 2** |
| **Total Overhead** | £120,000 | £45,000 |
| **Total labour hours** | 20,000 |  |
| **Number of units produced** |  | 10,000 |
| **Overhead per machine hour/ unit of product** | **£6.00** | **£4.50** |

Product Cost £

Direct costs (Prime cost) 40.00 Production overheads – Department 1 6.00 X 20,000/10,000 12.00 Department 2 4.50

Product cost 56.50