

SECTION D

- ① 12000 students - Total
60% - full time 16 hrs / term
40% - half load 8 hrs / term

$$\frac{60}{100} \times 12000 + \frac{20}{100} \times \frac{12000}{2}$$

$$7200 + 2400 = \underline{\underline{9600}} \text{ Full time students}$$

Calculation of Equivalent Units for Direct Material

Units completed and transferred out	45,000
Ending inventory 100% of 10,000	10,000
Equivalent units for Direct Material	55,000

Answer (B)

Calculation of Equivalent Units for Conversion Cost

Units completed and transferred out	45,000
Ending inventory 70% of 10,000	7,000
Equivalent units for Conversion Cost	52,000

③ (a) Equivalent units for DM cost = Partially completed for DM $\times$ % of Completion.

$$= 1000 \times \frac{75}{100} = \underline{\underline{750}}$$

(b) Equivalent units for conversion cost = No. of partially complete items $\times$ % of Completion.

$$= 1000 \times \frac{55}{100} = \underline{\underline{550}}$$

(c) Cost per equivalent unit of DM = $\frac{\text{material cost}}{\text{Equivalent cost}}$

$$= \frac{115000}{750} = \$153.33 \text{ per equivalent unit of DM}$$

(d) Cost per equivalent unit of conversion cost = $\frac{\text{conversion cost}}{\text{equivalent units}}$

$$= \frac{166500}{550} = \$302.73 \text{ per equivalent unit of DM}$$

(e) Cost to complete a UNIT = DM + conversion cost

$$= 153.33 + 302.73 = \underline{\underline{456.06 \$}}$$

(f) Average cost of each unfinished unit = $153.33 + 302.73 = \underline{\underline{456.06}}$

	Equivalent Units	
	Material	Conversion
Units completed and transferred out	18,000	18,000
Units in ending work in process	7,000	2,800 (7,000*40%)
Equivalent units of production	25,000	20,800

a. Total equivalent units for direct materials = 25,000

b. Total equivalent units for conversion costs = 20,800

	Materials	Conversion
Cost of beginning work in process	\$50,000	\$22,000
Cost added during the period	250,000	290,000
Total costs	300,000	312,000
Cost of units transferred out		

work in process		(7,000*40%)
Equivalent units of production	25,000	20,800

a. Total equivalent units for direct materials = 25,000

b. Total equivalent units for conversion costs = 20,800

	Materials	Conversion
Cost of beginning work in process	\$50,000	\$22,000
Cost added during the period	250,000	290,000
Total costs	300,000	312,000
Equivalent units of production	25,000	20,800
Cost per equivalent unit	\$12	\$15

c. Cost per equivalent unit for direct material = \$12

d. per equivalent unit for conversion costs = \$15

e. Cost of each unit completed and transferred out:

Materials (18,000*\$12)	\$216,000
Conversion costs (18,000*\$15)	270,000
Total costs	486,000
Total units	18,000
Cost of each unit completed and transferred out	\$27

- c. Cost per equivalent unit for direct material = \$12
- d. per equivalent unit for conversion costs = \$15
- e. Cost of each unit completed and transferred out:

Materials (18,000*\$12)	\$216,000
Conversion costs (18,000*\$15)	270,000
Total costs	486,000
Total units	18,000
Cost of each unit completed and transferred out	\$27

- f. Average cost of each unit in ending work in process:

Materials (7,000*\$12)	\$84,000
Conversion costs (2,800*\$15)	42,000
Total costs	126,000
Total units	7,000
Average cost per unit	\$18

- g. Selling price of each completed unit = $\$27/0.25 = \108

$$\begin{aligned}
 & 12000 \times \frac{50}{100} + 12000 \times \frac{15}{100} \times \frac{1}{2} + 12000 \times \frac{35}{100} \times \frac{3}{4} \\
 & 6000 + 900 + 3150 = \underline{\underline{10050}} \text{ equivalent full time scholars.}
 \end{aligned}$$

$$\begin{aligned}
 \text{Conversion cost} &= \text{Direct labour} + \text{manufacturing overhead} \\
 &= 160000 + 13000 = \underline{\underline{173000}}
 \end{aligned}$$

Answer is highlighted in Yellow:

Equivalent units of production (EUP):

Step 1	Particulars	Trans. Units	% Material	EUP - DM	% Conversion	EUP - Conversion
	Unit Completed	6500	100%	6500	100%	6500
	Ending Balance	1500	80%	1200	50%	750
	Equivalent Units of production	8000		7700		7250
Step 2	Particulars	Transfer In	Direct Material	Conversion	Total	
	Costs to be accounted for					
	Beginning Cost		0	0	0	
	Cost During the month		15000	25000	40000	
	Total Cost		15000	25000	40000	
	Equivalent Unit Production		7700	7250		
a and b:	Cost per EUP		\$ 2.50	\$ 3.50	\$ 6.00	

Cost of ending inventory	$(1500 \times 2.50) + (750 \times 3.50) =$	\$	5,625
Units in ending inventory			1500
Average cost of every unit of ending WIP		\$	3.75

Cost of units completed	$(6500 \times 6) =$	\$	39,000
Units completed			6500
Cost of every completed unit		\$	6.00

⑧ (a) Total equivalent unit for direct material = units completed + Units in WIP
 $= 45000 + 20000$
 $= \underline{\underline{65000 \text{ units}}}$

(b) Total equivalent units for units conversion = $45000 + (20000 \times 70\%)$
 $= 45000 + 14000$
 $= \underline{\underline{59000}}$

	Units	% Materials	Equivalent Units		Conversion
			Materials	% Conversion	
Completed and transferred out	18,000	100%	18,000	100%	18,000
Ending work in process	2,000	100%	2,000	80%	1,600
a & b Equivalent units of production	20,000		20,000		19,200
Cost per EUP			Direct Materials		Conversion Cost
Beginning work in process			\$50,000		\$22,000
Cost added during period			\$250,000		\$108,400
Total costs to account for			<u>\$300,000</u>		<u>\$130,400</u>
Divided by Equivalent units of production			20,000		19,200
c & d Cost per equivalent unit of production			\$15.00		\$12.80
Costs Assignment and					
Cost transferred out	EUP	Cost per EUP	Total Cost		
Direct materials	18,000	\$15.00	\$270,000		
Conversion	18,000	\$12.80	\$230,400		
e Total transferred out			\$488,000	\$27.00	
Cost of ending work in process					
Direct materials	2,000	\$15.00	\$30,000		
Conversion	1,600	\$12.80	\$20,480		
f Total ending work in process			\$44,480	\$12.50	