File: 16e\_GNB\_APP02B\_TB, Appendix 2B, The Predetermined Overhead Rate and Capacity

**True/False**

[QUESTION]

1. (Appendix 2B) When the fixed costs of capacity are spread over the estimated activity of the period rather than the level of activity at capacity, the units that are produced must shoulder the costs of unused capacity.

Answer: T

Difficulty: 2 Medium

Learning Objective: 02-06

Topic Area:

Bloom’s: Remember

AACSB: Reflective Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Feedback:

[QUESTION]

2. (Appendix 2B) When the predetermined overhead rate is based on the level of activity at capacity, an item called the Cost of Unused Capacity may appear be treated as a period expense on income statements prepared for internal management use.

Answer: T

Difficulty: 1 Easy

Learning Objective: 02-06

Topic Area:

Bloom’s: Remember

AACSB: Reflective Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Feedback:

[QUESTION]

3. (Appendix 2B) If the predetermined overhead rate on is based on the estimated level of activity for the current period, then products will be charged only for the capacity that they use and will not be charged for the capacity they don't use.

Answer: F

Difficulty: 2 Medium

Learning Objective: 02-06

Topic Area:

Bloom’s: Understand

AACSB: Reflective Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Feedback:

**Multiple Choice**

[QUESTION]

4. (Appendix 2B) Risser Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated jointer. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $14,256 |  |
|  | Capacity of the jointer | 240 | hours |
|  | Actual results: |  |  |
|  | Sales | $62,310 |  |
|  | Direct materials | $14,100 |  |
|  | Direct labor | $16,000 |  |
|  | Actual total fixed manufacturing overhead | $14,256 |  |
|  | Selling and administrative expense | $8,900 |  |
|  | Actual hours of jointer use | 220 | hours |

The gross margin that would be reported on the income statement prepared for internal management purposes would be closest to:

A) $10,242

B) $19,142

C) $17,954

D) $62,310

Answer: B

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-03

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $14,256 ÷ 240 hours = $59.40 per hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sales |  | $62,310 |
|  | Cost of Goods Sold: |  |  |
|  | Direct materials | $14,100 |  |
|  | Direct labor | 16,000 |  |
|  | Manufacturing overhead applied  220 hours × $59.40 per hour | 13,068 | 43,168 |
|  | Gross margin |  | $19,142 |

[QUESTION]

5. (Appendix 2B) The management of Garn Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity rather than on the estimated activity for the coming year. The Corporation’s controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours and the estimated activity for the upcoming year is 69,000 machine-hours. Capacity is 85,000 machine-hours. All of the manufacturing overhead is fixed and is $4,105,500 per year within the range of 69,000 to 85,000 machine-hours. If the Corporation bases its predetermined overhead rate on capacity but the actual level of activity for the year turns out to be 69,700 machine-hours, the cost of unused capacity shown on the income statement prepared for internal management purposes would be closest to:

A) $772,800

B) $780,640

C) $738,990

D) $41,650

Answer: C

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $4,105,500 ÷ 85,000 machine-hours = $48.30 per machine-hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $4,105,500 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $48.30 | per machine-hour |
|  | Actual hours | 69,700 | machine-hours |
|  | Manufacturing overhead applied to jobs | $3,366,510 |  |
|  | Cost of unused capacity | $738,990 |  |

[QUESTION]

6. (Appendix 2B) The management of Krach Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity. The company's controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours and the estimated amount of the allocation base for the upcoming year is 10,000 machine-hours. Capacity is 12,000 machine-hours and the actual level of activity for the year is assumed to be 9,500 machine-hours. All of the manufacturing overhead is fixed and both the estimated amount at the beginning of the year and the actual amount at the end of the year are assumed to be $12,000 per year. For simplicity, it is assumed that this is the estimated manufacturing overhead for the year as well as the manufacturing overhead at capacity. It is further assumed that this is also the actual amount of manufacturing overhead for the year.

If the company bases its predetermined overhead rate on capacity, what would be the cost of unused capacity reported on the income statement prepared for internal management purposes?

A) $2,000

B) $2,500

C) $1,900

D) $600

Answer: B

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN Measurement Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $12,000 ÷ 12,000 machine-hours = $1.00 per machine-hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $12,000 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $1.00 | per machine-hour |
|  | Actual hours | 9,500 | machine-hours |
|  | Manufacturing overhead applied to jobs | $9,500 |  |
|  | Cost of unused capacity | $2,500 |  |

[QUESTION]

7. (Appendix 2B) The management of Winterroth Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity. The Corporation's controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | Estimated at the Beginning of the Year | Capacity | Actual |
|  | Machine-hours | 53,000 | 63,000 | 49,000 |
|  | Manufacturing overhead | $1,803,060 | $1,803,060 | $1,803,060 |

If the Corporation bases its predetermined overhead rate on capacity, then as shown on the income statement prepared for internal management purposes, the cost of unused capacity would be closest to:

A) $286,200

B) $400,680

C) 264,600

D) $136,080

Answer: B

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $1,803,060 ÷ 63,000 machine-hours = $28.62 per machine-hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $1,803,060 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $28.62 | per machine-hour |
|  | Actual hours | 49,000 | machine-hours |
|  | Manufacturing overhead applied to jobs | $1,402,380 |  |
|  | Cost of unused capacity | $400,680 |  |

[QUESTION]

8. (Appendix 2B) Dowty Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated lathe. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $19,964 |  |
|  | Capacity of the lathe | 280 | hours |
|  | Actual results: |  |  |
|  | Actual total fixed manufacturing overhead | $19,964 |  |
|  | Actual hours of lathe use | 230 | hours |

The manufacturing overhead applied is closest to:

A) $19,964

B) $16,399

C) $7,639

D) $9,300

Answer: B

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $19,964 ÷ 280 hours = $71.30 per hour

Manufacturing overhead applied = Predetermined overhead rate × Actual amount of the allocation base = 230 hours × $71.30 per hour = $16,399

[QUESTION]

9. (Appendix 2B) Rapier Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated jointer. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $3,740 |  |
|  | Capacity of the jointer | 200 | hours |
|  | Actual results: |  |  |
|  | Actual total fixed manufacturing overhead | $3,740 |  |
|  | Actual hours of jointer use | 170 | hours |

The predetermined overhead rate based on hours at capacity is closest to:

A) $58.24 per hour

B) $49.50 per hour

C) $22.00 per hour

D) $18.70 per hour

Answer: D

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $3,740 ÷ 200 hours = $18.70 per hour

[QUESTION]

10. (Appendix 2B) Traeger Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated bandsaw. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $26,936 |  |
|  | Capacity of the bandsaw | 280 | hours |
|  | Actual results: |  |  |
|  | Actual total fixed manufacturing overhead | $26,936 |  |
|  | Actual hours of bandsaw use | 260 | hours |

The cost of unused capacity that would be reported as a period expense on the income statement prepared for internal management purposes would be closest to:

A) $1,924

B) $18,136

C) $0

D) $18,765

Answer: A

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $26,936 ÷ 280 hours = $96.20 per hour

Cost of unused capacity = (Amount of the allocation base at capacity − Actual amount of the allocation base) × Predetermined overhead rate = (280 hours − 260 hours) × $96.20 per hour = $1,924

Reference: APP02B-Ref1

(Appendix 2B) Mausser Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated jointer. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $11,648 |  |
|  | Capacity of the jointer | 280 | hours |
|  | Actual results: |  |  |
|  | Sales | $52,760 |  |
|  | Direct materials | $13,300 |  |
|  | Direct labor | $16,000 |  |
|  | Actual total fixed manufacturing overhead | $11,648 |  |
|  | Selling and administrative expense | $9,300 |  |
|  | Actual hours of jointer use | 260 | hours |

[QUESTION]

11. The cost of unused capacity that would be reported as a period expense on the income statement prepared for internal management purposes would be closest to:

A) $0

B) $2,348

C) $832

D) $3,012

Answer: C

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref1

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $11,648 ÷ 280 hours = $41.60 per hour

Cost of unused capacity = (Amount of the allocation base at capacity − Actual amount of the allocation base) × Predetermined overhead rate = (280 hours − 260 hours) × $41.60 per hour = $832

[QUESTION]

12. The gross margin that would be reported on the income statement prepared for internal management purposes would be closest to:

A) $52,760

B) $3,344

C) $12,644

D) $11,812

Answer: C

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-03

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref1

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $11,648 ÷ 280 hours = $41.60 per hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sales |  | $52,760 |
|  | Cost of Goods Sold: |  |  |
|  | Direct materials | $13,300 |  |
|  | Direct labor | 16,000 |  |
|  | Manufacturing overhead applied  260 hours × $41.60 per hour | 10,816 | 40,116 |
|  | Gross margin |  | $12,644 |

Reference: APP02B-Ref2

(Appendix 2B) Coble Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated shaper. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $33,075 |  |
|  | Capacity of the shaper | 270 | hours |
|  | Actual results: |  |  |
|  | Sales | $79,268 |  |
|  | Direct materials | $12,200 |  |
|  | Direct labor | $17,400 |  |
|  | Actual total fixed manufacturing overhead | $33,075 |  |
|  | Selling and administrative expense | $8,100 |  |
|  | Actual hours of shaper use | 250 | hours |

[QUESTION]

13. The predetermined overhead rate based on hours at capacity is closest to:

A) $30.00 per hour

B) $122.50 per hour

C) $32.40 per hour

D) $132.30 per hour

Answer: B

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref2

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $33,075 ÷ 270 hours = $122.50 per hour

[QUESTION]

14. The manufacturing overhead applied is closest to:

A) $7,500

B) $33,075

C) $8,100

D) $30,625

Answer: D

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref2

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $33,075 ÷ 270 hours = $122.50 per hour

Manufacturing overhead applied = Predetermined overhead rate × Actual amount of the allocation base = 250 hours × $122.50 per hour = $30,625

[QUESTION]

15. The cost of unused capacity that would be reported as a period expense on the income statement prepared for internal management purposes would be closest to:

A) $2,450

B) $0

C) $24,975

D) $25,575

Answer: A

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref2

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $33,075 ÷ 270 hours = $122.50 per hour

Cost of unused capacity = (Amount of the allocation base at capacity − Actual amount of the allocation base) × Predetermined overhead rate = (270 hours − 250 hours) × $122.50 per hour = $2,450

[QUESTION]

16. The gross margin that would be reported on the income statement prepared for internal management purposes would be closest to:

A) $19,043

B) $16,593

C) $10,943

D) $79,268

Answer: A

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-03

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref2

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $33,075 ÷ 270 hours = $122.50 per hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sales |  | $79,268 |
|  | Cost of Goods Sold: |  |  |
|  | Direct materials | $12,200 |  |
|  | Direct labor | 17,400 |  |
|  | Manufacturing overhead applied  250 hours × $122.50 per hour | 30,625 | 60,225 |
|  | Gross margin |  | $19,043 |

Reference: APP02B-Ref3

(Appendix 2B) Dunnings Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated router. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $10,998 |  |
|  | Capacity of the router | 180 | hours |
|  | Actual results: |  |  |
|  | Actual total fixed manufacturing overhead | $10,998 |  |
|  | Actual hours of router use | 130 | hours |

[QUESTION]

17. The predetermined overhead rate based on hours at capacity is closest to:

A) $84.60 per hour

B) $61.10 per hour

C) $61.54 per hour

D) $44.44 per hour

Answer: B

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref3

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $10,998 ÷ 180 hours = $61.10 per hour

[QUESTION]

18. The manufacturing overhead applied is closest to:

A) $7,943

B) $8,000

C) $5,778

D) $10,998

Answer: A

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref3

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $10,998 ÷ 180 hours = $61.10 per hour

Manufacturing overhead applied = Predetermined overhead rate × Actual amount of the allocation base = 130 hours × $61.10 per hour = $7,943

Reference: APP02B-Ref4

(Appendix 2B) The management of Bullinger Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity. The company's controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours and the estimated amount of the allocation base for the upcoming year is 9,000 machine-hours. Capacity is 12,000 machine-hours and the actual level of activity for the year is assumed to be 7,700 machine-hours. All of the manufacturing overhead is fixed and both the estimated amount at the beginning of the year and the actual amount at the end of the year are assumed to be $11,880 per year. For simplicity, it is assumed that this is the estimated manufacturing overhead for the year as well as the manufacturing overhead at capacity. It is further assumed that this is also the actual amount of manufacturing overhead for the year.

[QUESTION]

19. If the company bases its predetermined overhead rate on the estimated amount of the allocation base for the upcoming year, then the predetermined overhead rate is closest to:

A) $1.32 per machine-hour

B) $1.49 per machine-hour

C) $0.99 per machine-hour

D) $1.54 per machine-hour

Answer: A

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref4Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead ÷ Estimated total amount of the allocation base = $11,880 ÷ 9,000 machine-hours = $1.32 per machine-hour

[QUESTION]

20. If the company bases its predetermined overhead rate on capacity, then the predetermined overhead rate is closest to:

A) $1.54 per machine-hour

B) $1.32 per machine-hour

C) $1.49 per machine-hour

D) $0.99 per machine-hour

Answer: D

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref4Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $11,880 ÷ 12,000 machine-hours = $0.99 per machine-hour

[QUESTION]

21. If the company bases its predetermined overhead rate on capacity, what would be the cost of unused capacity reported on the income statement prepared for internal management purposes?

A) $2,970

B) $2,541

C) $1,716

D) $4,257

Answer: D

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref4Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $11,880 ÷ 12,000 machine-hours = $0.99 per machine-hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $11,880 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $0.99 | per machine-hour |
|  | Actual hours | 7,700 | machine-hours |
|  | Manufacturing overhead applied to jobs | $7,623 |  |
|  | Cost of unused capacity | $4,257 |  |

Reference: APP02B-Ref5

(Appendix 2B) Zackery Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated lathe. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $7,452 |  |
|  | Capacity of the lathe | 230 | hours |
|  | Actual results: |  |  |
|  | Actual total fixed manufacturing overhead | $7,452 |  |
|  | Actual hours of lathe use | 180 | hours |

[QUESTION]

22. The manufacturing overhead applied is closest to:

A) $9,900

B) $5,832

C) $7,748

D) $7,452

Answer: B

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref5

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $7,452 ÷ 230 hours = $32.40 per hour

Manufacturing overhead applied = Predetermined overhead rate × Actual amount of the allocation base = 180 hours × $32.40 per hour = $5,832

[QUESTION]

23. The cost of unused capacity that would be reported as a period expense on the income statement prepared for internal management purposes would be closest to:

A) $2,448

B) $296

C) $0

D) $1,620

Answer: D

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref5

Feedback:

Predetermined overhead rate based on capacity = Estimated total fixed manufacturing overhead cost at capacity ÷ Estimated total amount of the allocation base at capacity = $7,452 ÷ 230 hours = $32.40 per hour

Cost of unused capacity = (Amount of the allocation base at capacity − Actual amount of the allocation base) × Predetermined overhead rate = (230 hours − 180 hours) × $32.40 per hour = $1,620

Reference: APP02B-Ref6

(Appendix 2B) The management of Holdaway Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity. The company's controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours and the estimated amount of the allocation base for the upcoming year is 79,000 machine-hours. Capacity is 88,000 machine-hours and the actual level of activity for the year is assumed to be 74,900 machine-hours. All of the manufacturing overhead is fixed and both the estimated amount at the beginning of the year and the actual amount at the end of the year are assumed to be $5,700,640 per year. For simplicity, it is assumed that this is the estimated manufacturing overhead for the year as well as the manufacturing overhead at capacity. It is further assumed that this is also the actual amount of manufacturing overhead for the year.

[QUESTION]

24. If the company bases its predetermined overhead rate on capacity, then the predetermined overhead rate is closest to:

A) $72.16 per machine-hour

B) $70.38 per machine-hour

C) $76.11 per machine-hour

D) $64.78 per machine-hour

Answer: D

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref6Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $5,700,640 ÷ 88,000 machine-hours = $64.78 per machine-hour

[QUESTION]

25. If the company bases its predetermined overhead rate on capacity, what would be the cost of unused capacity reported on the income statement prepared for internal management purposes?

A) $295,856

B) $848,618

C) $583,020

D) $552,762

Answer: B

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref6Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $5,700,640 ÷ 88,000 machine-hours = $64.78 per machine-hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $5,700,640 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $64.78 | per machine-hour |
|  | Actual hours | 74,900 | machine-hours |
|  | Manufacturing overhead applied to jobs | $4,852,022 |  |
|  | Cost of unused capacity | $848,618 |  |

Reference: APP02B-Ref7

(Appendix 2B) The management of Featheringham Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity. The company's controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours and the estimated amount of the allocation base for the upcoming year is 62,000 machine-hours. Capacity is 75,000 machine-hours and the actual level of activity for the year is assumed to be 59,000 machine-hours. All of the manufacturing overhead is fixed and both the estimated amount at the beginning of the year and the actual amount at the end of the year are assumed to be $2,836,500 per year. It is assumed that a number of jobs were worked on during the year, one of which was Job Z77W which required 410 machine-hours.

[QUESTION]

26. If the company bases its predetermined overhead rate on capacity, then the predetermined overhead rate is closest to:

A) $48.08 per machine-hour

B) $37.82 per machine-hour

C) $48.91 per machine-hour

D) $45.75 per machine-hour

Answer: B

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref7

Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $2,836,500 ÷ 75,000 machine-hours = $37.82 per machine-hour

[QUESTION]

27. If the company bases its predetermined overhead rate on capacity, then the amount of manufacturing overhead charged to job Z77W is closest to:

A) $15,506.20

B) $19,065.00

C) $20,051.12

D) $19,711.27

Answer: A

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref7

Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $2,836,500 ÷ 75,000 machine-hours = $37.82 per machine-hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Manufacturing overhead applied to Job Z77W |  |  |
|  | Number of hours for the job | 410 | machine-hours |
|  | Predetermined overhead rate | $37.82 | per machine-hour |
|  | Manufacturing overhead applied to the job | $15,506.20 |  |

[QUESTION]

28. If the company bases its predetermined overhead rate on capacity, what would be the cost of unused capacity reported on the income statement prepared for internal management purposes?

A) $137,250

B) $605,120

C) $491,660

D) $467,870

Answer: B

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

Refer To: APP02B-Ref7

Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $2,836,500 ÷ 75,000 machine-hours = $37.82 per machine-hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $2,836,500 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $37.82 | per machine-hour |
|  | Actual hours | 59,000 | machine-hours |
|  | Manufacturing overhead applied to jobs | $2,231,380 |  |
|  | Cost of unused capacity | $605,120 |  |

Reference: APP02B-Ref8

(Appendix 2B) The management of Plitt Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity. The company's controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours and the estimated amount of the allocation base for the upcoming year is 69,000 machine-hours. Capacity is 82,000 machine-hours and the actual level of activity for the year is assumed to be 72,400 machine-hours. All of the manufacturing overhead is fixed and both the estimated amount at the beginning of the year and the actual amount at the end of the year are assumed to be $4,130,340 per year. It is assumed that a number of jobs were worked on during the year, one of which was Job Q20L which required 470 machine-hours.

[QUESTION]

29. If the company bases its predetermined overhead rate on the estimated amount of the allocation base for the upcoming year, then the predetermined overhead rate is closest to:

A) $57.05 per machine-hour

B) $60.83 per machine-hour

C) $59.86 per machine-hour

D) $50.37 per machine-hour

Answer: C

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref8Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead ÷ Estimated total amount of the allocation base = $4,130,340 ÷ 69,000 machine-hours = $59.86 per machine-hour

[QUESTION]

30. If the company bases its predetermined overhead rate on the estimated amount of the allocation base for the upcoming year, then the amount of manufacturing overhead charged to Job Q20L is closest to:

A) $23,673.90

B) $26,812.98

C) $28,589.98

D) $28,134.20

Answer: D

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref8Feedback:

Manufacturing overhead applied = Predetermined overhead rate × Actual amount of the allocation base = $59.86 per machine-hour × 470 machine-hours = $28,134.20

[QUESTION]

31. If the company bases its predetermined overhead rate on capacity, then the predetermined overhead rate is closest to:

A) $57.05 per machine-hour

B) $59.86 per machine-hour

C) $50.37 per machine-hour

D) $60.83 per machine-hour

Answer: C

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref8Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $4,130,340 ÷ 82,000 machine-hours = $50.37 per machine-hour

[QUESTION]

32. If the company bases its predetermined overhead rate on capacity, then the amount of manufacturing overhead charged to Job Q20L is closest to:

A) $28,589.98

B) $26,592.60

C) $26,812.98

D) $23,673.90

Answer: D

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref8Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $4,130,340 ÷ 82,000 machine-hours = $50.37 per machine-hour

Manufacturing overhead applied = Predetermined overhead rate × Actual amount of the allocation base= $50.37 per machine-hour × 470 machine-hours = $23,673.90

[QUESTION]

33. If the company bases its predetermined overhead rate on capacity, what would be the cost of unused capacity reported on the income statement prepared for internal management purposes?

A) $654,810

B) $687,076

C) $547,669

D) $483,552

Answer: D

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06Topic Area:Blooms: ApplyAACSB: Analytical ThinkingAICPA: BB Critical ThinkingAICPA: FN MeasurementRefer To: APP02B-Ref8Feedback:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $4,130,340 ÷ 82,000 machine-hours = $50.37 per machine-hour

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $4,130,340 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $50.37 | per machine-hour |
|  | Actual hours | 72,400 | machine-hours |
|  | Manufacturing overhead applied to jobs | $3,646,788 |  |
|  | Cost of unused capacity | $483,552 |  |

**Essay**

[QUESTION]

34. (Appendix 2B) The management of Kotek Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity rather than on the estimated amount of activity for the year. The company's controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours and the estimated amount of the allocation base for the upcoming year is 8,000 machine-hours. In addition, capacity is 10,000 machine-hours and the actual activity for the year is 8,700 machine-hours. All of the manufacturing overhead is fixed and is $6,400 per year. Job L77S, which required 220 machine-hours, is one of the jobs worked on during the year.

Required:

a. Determine the predetermined overhead rate if the predetermined overhead rate is based on activity at capacity.

b. Determine how much overhead would be applied to Job L77S if the predetermined overhead rate is based on activity at capacity.

c. Determine the cost of unused capacity for the year if the predetermined overhead rate is based on activity at capacity.

Answer:

a. Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $6,400 ÷ 10,000 MHs = $0.64 per MH

b. Manufacturing overhead applied to Job L77S

|  |  |  |  |
| --- | --- | --- | --- |
|  | Number of hours for the job | 220 | MHs |
|  | Predetermined overhead rate | $0.64 | per MH |
|  | Manufacturing overhead applied to the job | $140.80 |  |

c.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $6,400 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $0.64 | per MH |
|  | Actual hours | 8,700 | MHs |
|  | Manufacturing overhead applied to jobs | $5,568 |  |
|  | Cost of unused capacity | $832 |  |

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

[QUESTION]

35. (Appendix 2B) The management of Michaeli Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity rather than on the estimated amount of activity for the year. The company's controller has provided an example to illustrate how this new system would work.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimated activity for the upcoming year | 43,000 | machine-hours |
|  | Capacity | 50,000 | machine-hours |
|  | Actual activity for the year | 45,400 | machine-hours |
|  | Manufacturing overhead (all fixed) | $989,000 | per year |

Required:

Determine the cost of unused capacity for the year if the predetermined overhead rate is based on activity at capacity.

Answer:

Predetermined overhead rate = Estimated total manufacturing overhead ÷ Estimated total amount of the allocation base = $989,000 ÷ 50,000 MHs = $19.78 per MH

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $989,000 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $19.78 | per MH |
|  | Actual hours | 45,400 | MHs |
|  | Manufacturing overhead applied to jobs | $898,012 |  |
|  | Cost of unused capacity | $90,988 |  |

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

[QUESTION]

36. (Appendix 2B) The management of Schneiter Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity rather than on the estimated amount of activity for the year. The company's controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours and the estimated amount of the allocation base for the upcoming year is 42,000 machine-hours. In addition, capacity is 46,000 machine-hours and the actual activity for the year is 43,000 machine-hours. All of the manufacturing overhead is fixed and is $734,160 per year.

Required:

a. Determine the predetermined overhead rate if the predetermined overhead rate is based on activity at capacity.

b. Determine the cost of unused capacity for the year if the predetermined overhead rate is based on activity at capacity.

Answer:

a. Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $734,160 ÷ 46,000 MHs = $15.96 per MH

b.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $734,160 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $15.96 | per MH |
|  | Actual hours | 43,000 | MHs |
|  | Manufacturing overhead applied to jobs | $686,280 |  |
|  | Cost of unused capacity | $47,880 |  |

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

[QUESTION]

37. (Appendix 2B) Marder Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated jointer. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $24,500 |  |
|  | Capacity of the jointer | 250 | hours |
|  | Actual results: |  |  |
|  | Sales | $71,706 |  |
|  | Direct materials | $12,500 |  |
|  | Direct labor | $17,900 |  |
|  | Actual total fixed manufacturing overhead | $24,500 |  |
|  | Selling and administrative expense | $9,700 |  |
|  | Actual hours of jointer use | 200 | hours |

*Required:*

a. Calculate the predetermined overhead rate based on capacity.

b. Calculate the manufacturing overhead applied.

c. Determine the Gross Margin for the month.

d. Calculate the cost of unused capacity.

Answer:

a.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimated total fixed manufacturing overhead | $24,500 |  |
|  | Estimated activity level | 250 | hours |
|  | Predetermined overhead rate | $98.00 | per hour |

b. Manufacturing overhead applied = 200 hours × $98.00 per hour = $19,600

c.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sales |  | $71,706 |
|  | Cost of Goods Sold: |  |  |
|  | Direct materials | $12,500 |  |
|  | Direct labor | 17,900 |  |
|  | Manufacturing overhead applied | 19,600 | 50,000 |
|  | Gross margin |  | 21,706 |

d. Cost of unused capacity = (250 hours − 200 hours) × $98.00 per hour = $4,900

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

[QUESTION]

38. (Appendix 2B) The management of Bouyer Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity rather than on the estimated amount of activity for the year. The company's controller has provided an example to illustrate how this new system would work. In this example, the allocation base is machine-hours and the estimated amount of the allocation base for the upcoming year is 34,000 machine-hours. In addition, capacity is 37,000 machine-hours and the actual activity for the year is 34,700 machine-hours. All of the manufacturing overhead is fixed and is $377,400 per year.

Required:

Determine the cost of unused capacity for the year if the predetermined overhead rate is based on activity at capacity.

Answer:

Predetermined overhead rate = Estimated total manufacturing overhead at capacity ÷ Estimated total amount of the allocation base at capacity = $377,400 ÷ 37,000 MHs = $10.20 per MH

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $377,400 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $10.20 | per MH |
|  | Actual hours | 34,700 | MHs |
|  | Manufacturing overhead applied to jobs | $353,940 |  |
|  | Cost of unused capacity | $23,460 |  |

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

[QUESTION]

39. (Appendix 2B) The management of Buelow Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity rather than on the estimated amount of activity for the year. The company's controller has provided an example to illustrate how this new system would work.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimated activity for the upcoming year | 76,000 | machine-hours |
|  | Capacity | 94,000 | machine-hours |
|  | Actual activity for the year | 82,800 | machine-hours |
|  | Manufacturing overhead (all fixed) | $5,572,320 | per year |

Job Q58A, which required 130 machine-hours, is one of the jobs worked on during the year.

Required:

a. Determine the predetermined overhead rate if the predetermined overhead rate is based on the estimated activity for the upcoming year.

b. Determine how much overhead would be applied to Job Q58A if the predetermined overhead rate is based on estimated activity for the upcoming year.

c. Determine the predetermined overhead rate if the predetermined overhead rate is based on the activity at capacity.

d. Determine how much overhead would be applied to Job Q58A if the predetermined overhead rate is based on activity at capacity.

e. Determine the cost of unused capacity for the year if the predetermined overhead rate is based on activity at capacity.

Answer:

a. Predetermined overhead rate = Estimated total manufacturing overhead cost ÷ Estimated total amount of the allocation base = $5,572,320 ÷ 76,000 MHs = $73.32 per MH

|  |  |  |  |
| --- | --- | --- | --- |
| b. | Manufacturing overhead applied to Job Q58A |  |  |
|  | Number of hours for the job | 130 | MHs |
|  | Predetermined overhead rate | $73.32 | per MH |
|  | Manufacturing overhead applied to the job | $9,531.60 |  |

c. Predetermined overhead rate = Estimated total manufacturing overhead cost ÷ Estimated total amount of the allocation base = $5,572,320 ÷ 94,000 MHs = $59.28 per MH

|  |  |  |  |
| --- | --- | --- | --- |
| d. | Manufacturing overhead applied to Job Q58A |  |  |
|  | Number of hours for the job | 130 | MHs |
|  | Predetermined overhead rate | $59.28 | per MH |
|  | Manufacturing overhead applied to the job | $7,706.40 |  |

|  |  |  |  |
| --- | --- | --- | --- |
| e. | Actual manufacturing overhead cost incurred | $5,572,320 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $59.28 | per MH |
|  | Actual hours | 82,800 | MHs |
|  | Manufacturing overhead applied to jobs | $4,908,384 |  |
|  | Cost of unused capacity | $663,936 |  |

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

[QUESTION]

40. (Appendix 2B) Knipple Woodworking Corporation produces fine cabinets. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated bandsaw. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $24,288 |  |
|  | Capacity of the bandsaw | 240 | hours |
|  | Actual results: |  |  |
|  | Sales | $71,473 |  |
|  | Direct materials | $10,400 |  |
|  | Direct labor | $17,300 |  |
|  | Actual total fixed manufacturing overhead | $24,288 |  |
|  | Selling and administrative expense | $9,100 |  |
|  | Actual hours of bandsaw use | 230 | hours |

*Required:*

Prepare an income statement following the Example in Appendix 2B in which any cost of unused capacity is directly recorded on the income statement as a period expense.

Answer:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimated total fixed manufacturing overhead | $24,288 |  |
|  | Estimated activity level | 240 | hours |
|  | Predetermined overhead rate | $101.20 | per hour |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Sales |  | $71,473 |
|  | Cost of Goods Sold: |  |  |
|  | Direct materials | $10,400 |  |
|  | Direct labor | 17,300 |  |
|  | Manufacturing overhead applied  230 hours × $101.20 per hour | 23,276 | 50,976 |
|  | Gross margin |  | 20,497 |
|  | Cost of unused capacity  (240 hours − 230 hours) × $101.20 per hour | $1,012 |  |
|  | Selling and administrative expense | 9,100 | 10,112 |
|  | Net operating income |  | $10,385 |

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

[QUESTION]

41. (Appendix 2B) The management of Wrights Corporation would like to investigate the possibility of basing its predetermined overhead rate on activity at capacity rather than on the estimated amount of activity for the year. The company's controller has provided an example to illustrate how this new system would work.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimated activity for the upcoming year | 15,000 | machine-hours |
|  | Capacity | 18,000 | machine-hours |
|  | Actual activity for the year | 15,800 | machine-hours |
|  | Manufacturing overhead (all fixed) | $43,200 | per year |

Required:

a. Determine the predetermined overhead rate if the predetermined overhead rate is based on the estimated activity for the upcoming year.

at capacity.

b. Determine the cost of unused capacity for the year if the predetermined overhead rate is based on activity at capacity.

Answer:

a. Predetermined overhead rate = Estimated total manufacturing overhead ÷ Estimated total amount of the allocation base = $43,200 ÷ 15,000 MHs = $2.88 per MH

b. Predetermined overhead rate = Estimated total manufacturing overhead ÷ Estimated total amount of the allocation base = $43,200 ÷ 18,000 MHs = $2.40 per MH

|  |  |  |  |
| --- | --- | --- | --- |
|  | Actual manufacturing overhead cost incurred | $43,200 |  |
|  | Manufacturing overhead applied to jobs: |  |  |
|  | Predetermined overhead rate | $2.40 | per MH |
|  | Actual hours | 15,800 | MHs |
|  | Manufacturing overhead applied to jobs | $37,920 |  |
|  | Cost of unused capacity | $5,280 |  |

Difficulty: 2 Medium

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement

[QUESTION]

42. (Appendix 2B) Danaher Woodworking Corporation produces fine furniture. The company uses a job-order costing system in which its predetermined overhead rate is based on capacity. The capacity of the factory is determined by the capacity of its constraint, which is an automated lathe. Additional information is provided below for the most recent month:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimates at the beginning of the month: |  |  |
|  | Estimated total fixed manufacturing overhead | $22,701 |  |
|  | Capacity of the lathe | 230 | hours |
|  | Actual results: |  |  |
|  | Actual total fixed manufacturing overhead | $22,701 |  |
|  | Actual hours of lathe use | 210 | hours |

*Required:*

a. Calculate the predetermined overhead rate based on capacity.

b. Calculate the manufacturing overhead applied.

c. Calculate the cost of unused capacity.

Answer:

a.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Estimated total fixed manufacturing overhead | $22,701 |  |
|  | Estimated activity level | 230 | hours |
|  | Predetermined overhead rate | $98.70 | per hour |

b. Manufacturing overhead applied = 210 hours × $98.70 per hour = $20,727

c. Cost of unused capacity = (230 hours − 210 hours) × $98.70 per hour = $1,974

Difficulty: 1 Easy

Learning Objective: 02-01

Learning Objective: 02-02

Learning Objective: 02-06

Topic Area:

Blooms: Apply

AACSB: Analytical Thinking

AICPA: BB Critical Thinking

AICPA: FN Measurement