

# College of Applied Business (CAB)

Sent-up Examination, February 2015

## BIM / Fifth Semester / ITC 221: Computer Graphics

*Candidates are required to give their answer in their own words as far as practicable.*

### Section A

**Time: 20 minutes**

#### Brief Answer Questions.

**[10×1=10]**

1. What do you understand by the term retrace procedure?
2. Which algorithm would you prefer to draw a line and why?
3. Why do you think Cohen Sutherland line clipping is considered to be more popular than any other line clipping algorithm?
4. Write down the steps to convert the window area into the viewport area.
5. How can you represent 2D rotation in a homogenous coordinate system?
6. What do you understand by the term simulator and the simulation?
7. Give one difference between bitmap and the pixmap.
8. Write down the matrix to perform the rotation of an object along z –axis.
9. What is projection and give few differences between perspective and parallel projection.
10. What is 2D viewing pipeline?

### Section B

**Time: 30 minutes**

#### Short Answer Questions.

**[3×3=9]**

11. Write down midpoint circle algorithm.
12. What are the four test conditions needed to perform for checking the consistency and completeness of data in geometric data table?
13. Digitize the given line end points (3,-3) and (-3, 5) using BLA algorithm.

### Section C

**Time: 70 minutes**

#### Short Answer Questions.

**[2×3=6]**

14. How region code is calculated in Cohen Sutherland Line clipping algorithm? Explain inside outside test in Sutherland Hodgeman Polygon clipping algorithm.
15. What are the different steps in order to perform the animation sequence? What is the size of the animated video which is 1 second long and consists of 100 frames if the each frame size is represented by 200 bits?

#### Long Answer Questions.

**[3×5=15]**

16. Clip a line with XY ends X(3,5) and Y(9,3) against clipping boundary MNOP, M(3,3) N(3,8) O(8,8) P(8,3) using Cohen Sutherland Line clipping algorithm.
17. What are the different ways for representing 3D objects in the field of computer graphics? Describe the information stored in the polygon table with suitable example.
18. Write short notes on:
  - a) HSV Color model.
  - b) History of computer graphics

# College of Applied Business (CAB)

Sent-up Examination, February 2015

**BIM / Fifth Semester / ACC202: Cost and Management Accounting**

*Candidates are required to give their answer in their own words as far as practicable.*

**Section A**

**Time: 15 minutes**

**Brief answer questions. Attempt ANY TWO questions.**

[2×2=4]

1. Give the meaning fixed cost with suitable example.
2. Following information is given.

Output	Units	Costs (Rs)
Lowest	5,000	22,000
Highest	10,000	32,000

**Required:** Segregate fixed costs and variable costs using High-low Point method.

3. An income statement of a company is given below:

Particulars	Amounts (Rs)
Units Sold	15,000
Sales revenue	600,000
Less: Variable costs	420,000
Contribution margin	180,000
Less: Fixed costs	150,000
Net Income	30,000

**Required:** a) BE sales in unit                      b) Sales units to earn a profit of Rs. 80,000

4. Chhetry & Co provides the following information

Sales .....Rs. 8,00,000	Shareholders' equity.....Rs. 200,000
long-term loan .....Rs. 50,000	Cost of goods sold.....Rs. 600,000
Operating expenses .....Rs. 120,000	Total assets.....Rs. 6,00,000

**Required:** (a) Gross profit ratio                      b) Return on assets

# College of Applied Business (CAB)

Sent-up Examination, February 2015

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**Section A**

**Time: 15 minutes**

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# College of Applied Business (CAB)

Sent-up Examination, February 2015

BIM / Fifth Semester / ACC202: Cost and Management Accounting

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**Section B**

**Time: 15 minutes**

**Short answer questions. Attempt ANY ONE question.**

[1×6=6]

5. A manufacturing company has supplied the following information:

Normal capacity in units	50,000
Production units	55,000
Units sold	60,000
Opening Stock in units	5,000
Material cost per unit	Rs. 2
Labour cost per unit	Rs. 3
Variable manufacturing overhead per unit	Rs. 2
Variable administrative and selling overhead per unit	Rs. 2
Fixed manufacturing overhead	Rs. 150,000
Fixed administrative and selling overhead	Rs. 90,000
Selling price per unit	Rs. 20

**Required:** Income Statement under Variable costing.

6. A manufacturing company has supplied the following information:

Materials	Standard			Actual		
	Quantity	Rate (Rs)	Cost (Rs)	Quantity	Rate (Rs)	Cost (Rs)
A	2	4	8	190	4	760
B	3	3	9	290	3.1	899
C	5	2	10	520	1.8	936
<b>Total</b>	<b>10</b>		<b>27</b>	<b>900</b>		<b>2,595</b>
Standard output 8 units			Actual output 800 units			

- Required:** a) Material cost variance                      b) Material price variance  
 c) Material usage variance                              d) Material mix variance  
 e) Material yield variance

7. A mobile telephone manufacturing company of Singapore has dispatched a proposal for the installation of mobile telephone manufacturing unit in Kathmandu. The proposal contains that the plant to be installed for the purpose will require Rs. 2,200,000 inclusive of Net working capital requirement of Rs. 200,000 in the initial year of investment and will have zero salvage value at the end. The pre-operation expenses covering internal layout design requires additional expenses of Rs. 100,000 on the building hired on rent and to be written off during the project period. The annual capacity output of the project is 1,000 mobile telephone sets and the proposed selling price is Rs. 15,000 per set. The expected variable cost is 90% of the sales revenue. The annual fixed production cost is Rs. 600,000 exclusive of depreciation. Corporate income tax applicable is 40% and applicable from the third year only. Expected rate of return is 15%. The government of Nepal has agreed to grant license for 10 years only. The cash realizable value expected after the termination of the stipulated period is Rs. 100,000.

**Required:** a) NCO    b) Annual CFAT    c) Final year CFAT    d) NPV  
 e) Desirability of the project

8. M/S Allied Product Ltd is a manufacturing company. It has been buying a component used in its finished product from a supplier at a price of Rs 10 per unit. Cost of producing one unit of its finished product including the cost of two units of component will be:

Direct Material	Rs 50.00
Direct Labour	Rs 30.00
Manufacturing Overhead	Rs 10.00
Total	Rs 90.00

Company's normal capacity will be 10,000 units and manufacturing overhead cost (fixed) at this volume will be Rs 80,000 . The company produces 8,000 units of product and sell it at Rs 110.00 per unit. The un utilised capacity of 2,000 units may be utilised to produce required numbers of components, therefore, the company likes to produce its own component. A cost estimate has been prepared for the component and it will be:

Direct Material	Rs 4.00 per unit
Direct Labour	Rs 5.00 per unit
Manufacturing Overhead	Rs. 1.25 per unit
Total	Rs 10.25 per unit

**Required:** A differential Income Statement to analyse why the company should make its own components.

# College of Applied Business (CAB)

Sent-up Examination, February 2015

**BIM / Fifth Semester / ACC202: Cost and Management Accounting**

*Candidates are required to give their answer in their own words as far as practicable.*

## Section C

**Time: 90 minutes**

### Comprehensive answer question.

9. The Balance of a manufacturing company at the end of year 2014 and other information have been provided below:

BALANCE SHEET

Liabilities		Assets	
Accounts payable	Rs 24,000	Cash at Bank	Rs 20,000
Wages outstanding	Rs 12,000	Accounts receivable	Rs 80,000
10% Debentures	Rs 50,000	Inventories:	
		Finished goods @ Rs 12	Rs 144,000
		Raw materials. @ Rs. 4	Rs 60,000
Equity capital	Rs 200,000	Plant n machinery net	Rs 18,000
Retained earnings	Rs 36,000		
Total	Rs 322,000	Total	Rs. 322,000

The sales of last quarter of 2014 was 10,000 units. Budgeted sales for 2015 and first quarter of 2016 will be 12,000 units, 15,000 units, 20,000 units, 20,000 units and 15,000 units per quarter respectively. The selling price will be Rs 20, per unit. 20% of sales will be in cash and remaining will be on credit. Out of credit sales 50% will be realised in the quarter of sales and balance in the next quarter of sales.

**Required:** Sales Budget. [2]

The company has a policy of keeping sufficient inventory of finished product that will be required to meet the next quarter of sales need.

**Required:** Production budget. [2]

One unit of finished product will need one unit of raw materials @ Rs 4.00 per unit. The raw material inventory will be sufficient inventory to meet next quarter of production need. Purchases will be 60% in cash and 40% on credit payable on the next quarter.

**Required:** a. Direct Material consumption and purchase Budget. [3]

The product will have single process and processing time will be 2DLH and wage rate will be Rs 2.50 per DLH. 80% of wages due will be paid in the quarter and 20% in the next quarter of wages being due.

**Required:** Direct Labour hour and Direct Labour cost Budget. [3]

Indirect labour per unit will be Rs 2 and indirect material need will be Rs 1 per unit. The fixed manufacturing overhead cost excluding depreciation cost will be Rs 30,000 per quarter. The existing machinery was purchased last year and ten years life has been used in depreciating it. This will be sold at Rs 20,000 at the beginning of quarter one and a new machinery at a cost of Rs 100,000 will be purchase on the same date. This will also have the service life of 10 years.

**Required:** Manufacturing Overhead cost Budget. [2]

The selling and distribution cost will be 20% of gross sales and administrative cost will be Rs. 20,000 per quarter.

**Required:** Administrative, Selling and Distribution cost Budget. [2]

The company will keep a minimum cash balance of Rs 20,000. It will redeem 10% debenture at a premium on the first day of quarter three with interest for last two quarters of its use and also pay a dividend of 10% on equity shares on the same day. Additional equity capital of Rs.100,000 will be issued at 10% premium on the last quarter of 2015 . Bank credit at 12% p a will be available to meet temporary cash deficit, but borrowings will be in a multiple of Rs 5,000 and repayments will be Rs 1,000.

**Required:** a. Cash collection and Disbursement Budget [6]

b. Budgeted Income Statement [3]

c. Budgeted Balance Sheet [3]

d. Budgeted Cash Flow Statement. [4]

# College of Applied Business (CAB)

Sent-up Examination, February 2015

**BIM / Fifth Semester / ITC 223: Artificial Intelligence**

*Candidates are required to give their answer in their own words as far as practicable.*

## Section A

**Time: 20 minutes**

### Brief Answer Questions.

**[10×1=10]**

1. Differentiate between rational agent and omniscience.
2. Define frame.
3. Write modus tollens with example.
4. What is multi-layer neural network?
5. What do you mean by skolemization?
6. Define CNF.give examples
7. Write the PEAS description of face recognition agent.
8. Why learning is important in AI?
9. Define machine vision.
10. What do you mean by semantic analysis?

## Section B

**Time: 30 minutes**

### Short Answer Questions.

**[3×3=9]**

11. Consider the following sentences:
  - Rakshya likes all kinds of food.
  - Apples are food.
  - Hari is married to Rita.
  - All men are people.Represent these facts in predicate logic.
12. What is blind search ? explain BFS and DFS with examples.
13. What is simple reflex agents? Write agent program for simple reflex agent.

### Short Answer Questions.

**[2×3=6]**

14. Explain the components of experts system.
15. Define CSP. Solve the cryptarithmic problem

$$\begin{array}{r} \text{P I N} \\ + \text{P I N} \\ \hline \text{K N O T} \end{array}$$

### Long answer questions

**[5×3=15]**

16. Assume the following facts:
  - Steve only likes easy courses.
  - Science courses are hard.
  - All the courses in the education department are easy.
  - Ed302 is a education course.Use resolution to answer the question, “ What course would steve like?”
17. Define genetic algorithm. Explain its operator.
18. What is artificial neural network? Write back propagation training algorithm for neural network.

OR

19. Define heuristic search. Explain A\* search and alpha beta pruning algorithm with examples.

# College of Applied Business (CAB)

Sent-up Examination, February 2015

## BIM / Fifth Semester / ITC 222: JAVA Programming

*Candidates are required to give their answer in their own words as far as practicable.*

### Section A

**Time: 20 minutes**

#### Brief Answer Questions.

**[10×1=10]**

1. What is use of “static” keyword ?
2. What is the use of “super” ?
3. What is String ?
4. What is the use of “finalize” method ?
5. What is constructor overloading ?
6. What is a datagram ?
7. What is the use of “join” method in threads ?
8. Define package.
9. What is synchronization ?
10. What is the use of “throws” keyword ?

### Section B

**Time: 30 minutes**

#### Short Answer Questions.

**[3×3=9]**

11. Differentiate between abstract class and interface.
12. Does Java support multiple inheritance ? Explain inheritance with an example.
13. What is a thread ? What are the ways to create a thread ? Show with example.

### Section C

**Time: 70 minutes**

#### Short Answer Questions.

**[2×3=6]**

14. What is exception handling ? Illustrate with an example.
15. Write a program to connect to MySQL database.

#### Long Answer Questions.

**[3×5=15]**

16. What are different I/O streams ? Write a program that reads a file as well as writes to a file using char streams.
17. Write a program to show a graphical window(frame) with textinput and button using swing ? Add an event to the button which shows the text in new frame?
18. Differentiate between TCP and UDP. Write a simple client/server program for TCP communication.

# College of Applied Business (CAB)

Sent-up Examination, February 2015

## BIM / Fifth Semester / ECO 202: Macroeconomics

*Candidates are required to give their answer in their own words as far as practicable.*

### Section A

**Time: 20 minutes**

Brief answer questions:

[10×1=10]

1. Define comparative macro-statics.
2. In which condition  $GDP_{MP}$  equals with  $GDP_{FC}$ ?
3. What is the main cause of unemployment according to Keynes?
4. Define LM equation.
5. What is meant by built-in flexibility?
6. What are the components of net investment?
7. Define consumption function.
8. Point out any two characteristics of cost – push inflation.
9. Define narrow and broad money.
10. Prove that sum of MPC and MPS is equal to unity.

### Section B

**Time: 30 minutes**

Short answer questions: (ANY TWO)

[2×5=10]

11. Explain the principle of effective demand.
12. State and explain the various measures used for the control of inflation.
13. Explain the concept of paradox of thrift with the help of suitable example.
14. Explain the different phases of trade cycle.

### Section C

**Time: 80 minutes**

Comprehensive answer questions:

[2×10=20]

15. If break even consumption RS 1200 and MPC equals to .80, what will be the consumption function and saving function?
  - a. Construct hypothetical consumption and saving schedules and derive their curves.
  - b. Explain all propositions of psychological law of consumption function with the help of schedule and curve.

16. The following are the Hypothetical data of an economy. (2004)

<u>Items</u>	<u>Rs. in Crore</u>
NDP at factor cost	15840
Income from domestic product accruing to the govt.	140
Interest on National Debt	170
Transfer Payments	240
Net factor income from rest of the world	80
Indirect taxes	1330
Subsidies	100
Direct tax on individuals	335
Tax on corporate profits	105
Depreciation	410

*Answer the following Questions:*

- a) Define GDP and estimate  $GDP_{fc}$ .
- b) Explain  $NNP_{mp}$  and also calculate  $NNP_{mp}$ .
- c) What is GNP? Estimate  $GNP_{mp}$ .
- d) Define  $NNP_{fc}$  or National Income at factor cost. Differentiate NDP at factor cost and NI at factor cost.