

Assignment-1: Management (Grade- 12)

This is notifying that students of Grade XI and Xii must complete the Assignment during Dashain and Tihar with in 15th of Kartik. Students must completed assignment on 17th of Kartik.

Compulsory English

1. Answer any three Questions

- why does the old pensioner want to spit on the face time ?
(The Lamentation of the Old Pensioner)
- How are the boy's uncle and aunt? (A story)
- What are the four things that Ray Young Bear remembers about his grandmother? (Grandmother)
- Do you think Mr. Doran married Polly? Explain. (The Boarding House)

2. Answer any ONE of the following

- Describe the problem of over population and deforestation that Moti Nissani has dealt with. (Two Long Term Problems)**
- Write a few paragraphs to show how Karnali Zone is economically linked to the low land region to the south. (Hurried Trip to Avoid A B ad Star)**

3. Continue the following remarks with look, sound,, smell, feel, taste +like....

- I wonder who wrote that music.
- Are you sure this is tea?
- He has got foreign accent
- I have got something in my shoe.
- Do you think this is lather?

4. How would you describe a person who

- gives away lots of money.....
- never loses his temper.....
- likes to go to party.....
- doubts what you tell him.....
- always goods thing to happen.....

5. Fill in the blanks with the sentences below with for, until, by, in

- I finish my work.....9:30 pm
- The film was overthree hours.
- We did some housework.....two months.
- He stayed in bed.....lunch time.
- They got passport.....a few days

6. Write a police description of a person who has involved in kidnapping a child.

7. Write a letter to your friend who has just migrated to Nigeria for permanent settlement with his/her family.

Economics

Long Questions

1. Explain the various functions of commercial banks/
2. Explain the functions of a central bank.
3. Explain the roles of banking system in economy.

Short Questions

1. Write short note on central bank.
2. Write short note on commercial banks.
3. What is bank? What are the various types of banks or financial institutions?
4. Show the difference between money market and capital market.

Business Mathematics

A. Number System

1. For any real numbers x and y , prove that: $|x + y| \leq |x| + |y|$.
2. Rewrite: $-5 \leq x \leq 2$ in absolute value form.
3. Rewrite so that x is alone between the inequality sign: $|4x + 3| \leq 9$.
4. If $x = -5$ and $y = 4$, verify that $|x + y| \leq |x| + |y|$.
5. Express the complex number $(4-3i)(2-i)$ in the form of $A+iB$.
6. $Z_1 = 2+3i$ and $Z_2 = 3-2i$, find the value of $\overline{Z_1^2} + \overline{Z_2^2}$.
7. If $x+iy = \frac{a+i}{a-ib}$, prove that $x^2+y^2=1$.
8. Find the modulus of $Z = \frac{(1-i)^3}{1-i^3}$.
9. If $a+ib = \sqrt{\frac{1+i}{1-i}}$, Show that $a^2+b^2 = 1$.
10. Find the value of: $3i^3+2i^5+4i^{11}+5i^{13}$.

B. Set and Relation

1. Given that $U = \{1,2,3,\dots,15\}$, $A = \{x: x \geq 8\}$, $B = \{x: x \leq 4\}$, $C = \{x: 4 < x < 12\}$. Find $(A \cup B \cap C)^c$. Also verify that $A - (B \cup C) = (A - B) \cap (A - C)$.
2. In a BBS 1st year examination, 58% failed in Account, 39% in English and 25% in Statistics, 32% in Account and English, 19% in account and Statistics, 17% in English and Statistics and 13% in all the three subjects.
 - a) What percent passed in all the three subjects?
 - b) What percent failed in exactly two subjects?
 - c) What percent failed in exactly in one subject?
3. A survey of 500 television viewer produced the following information: 285 watch football, 195 watch hockey, 115 watch basketball, 45 watch football and basketball, 70 watch football and hockey, 50 watch hockey and basketball, 50 do not watch any three games. How many watch all the three games? How many of them watch exactly one game? Show the above information in venn-diagram.
4. Two students are discussing the function $f(x) = \frac{x^2-4}{x^2-9}$ and one says to other 'f(2) exists but f(3) does not'. Explain what they are talking about?
5. If $A = \{a,b,c\}$ and $B = \{p,q\}$. Show that $A \times B \neq B \times A$. But $n(A \times B) = n(B \times A)$.
6. Given that $A = \{1,2,3,4\}$, find the relation set in $A \times A$ determined by the condition $y < x$; $x, y \in A$.
7. Let $A = \{1,2,3\}$ and $B = \{3,4,6\}$. Find $A \times B$. Also find the relation from set A to set B satisfying the condition a) $x+y > 6$. b) $y-x \leq -1$ c) $x+y = 8$ d. y is divisible by x .

Also write the domain and range of relation in each condition and write inverse relation too.

8. If $A = \{a,b\}$, $B = \{b,c\}$ and $C = \{c,d\}$, find $A \times (B \cap C)$, $(A \cup B) \times C$, $(A \times B) \cup (A \times C)$, $(A \cap C) \times (B \cap C)$.

9. Let $f:A \rightarrow B$ be defined by

$$F(x) = \begin{cases} 3 + 2x & \text{for } -3/2 \leq x < 0 \\ 3 - 2x & \text{for } 0 \leq x < 3/2 \\ -3 - 2x & \text{for } x \geq 3/2 \end{cases}$$

Find the image of $-3/2, 0, 2 \in A$; and B being the subset of R .

10. If $f(x) = x + |x|$ find $f(2)$, $f(-2)$ and $f(-5/2)$.

C. Sequence and Series

1. If the n^{th} term of an A.P. 23,26,29,32,..... is equal to the n^{th} term of an A.P. 59,58,57,56,.... find the number of terms.
2. Find 4 arithmetic means between $\frac{1}{2}$ and $4\frac{1}{4}$.
3. Find the sum of all natural number between 7 and 137 which are exactly divisible by 5.
4. Find three numbers in A.P. such that their sum is 30 and the sum of their square is 350.
5. If 7 times the 7th term of an A.P. is equal to 11 times 11th term, show that the 18th term of the A.P. is zero.
6. Three numbers are in the ratio of 1:2:4, if 3 is added to the first and 8 is subtracted from the third, the new numbers will be the first and term of an A.P. , whose second term is the second number, Find the original numbers.
7. How many terms of the series $2+4+6+8+\dots$ must be taken in order that the sum may be 420?
8. Sum to n terms of the series: $5+55+555+5555+\dots$
9. Insert 5 geometric mean between $3\frac{5}{9}$ and $40\frac{1}{2}$.
10. The sum of first three terms of a G.P. is $\frac{39}{10}$ and their product is 1. Find the first term and common ratio. Also find 7th term and sum of first five terms.
11. Three numbers are in the ratio 1:2:3. If 2,4 and 11 are added to them respectively, the resulting numbers are in G.P. Find the original three numbers.

D. Matrices and Determinants.

1. If $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 0 \\ 2 & -3 \end{bmatrix}$ and $C = \begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix}$ Verify that

i) $A + (B+C) = (A+B)+C$

ii) $A(B+C) = AB+ AC$

iii) $A(BC) = (AB)C$

2. Construct a 3×3 matrix whose elements are given by $a_{ij} = 2i-3j$.

3. Show that:
$$\begin{vmatrix} x - y - z & 2x & 2x \\ 2y & y - z - x & 2y \\ 2z & 2z & z - x - y \end{vmatrix} = (x+y+z)^3.$$

4. Prove that:
$$\begin{vmatrix} 1 & x & yz \\ 1 & y & zx \\ 1 & z & xy \end{vmatrix} = \begin{vmatrix} 1 & x & x^2 \\ 1 & y & y^2 \\ 1 & z & z^2 \end{vmatrix} = (x-y)(y-x)(z-x)$$

5. Show that:
$$\begin{vmatrix} a^2 + 1 & ab & ac \\ ab & b^2 + 1 & bc \\ ac & bc & c^2 + 1 \end{vmatrix} = 1 + a^2 + b^2 + c^2$$

6. Show that:
$$\begin{vmatrix} a + b + c & -c & -b \\ -c & a + b + c & -a \\ -b & -a & a + b + c \end{vmatrix} = 2(a+b)(b+c)(c+a)$$

7. Solve the following equation using Cramer's rule. $2x+3y=4; 4x-z=5; 4y+3z= -5$.

8. 40 people are employed in a certain factory. If the daily total wages bill of a factory is Rs 3625 when a man gets Rs100 and a woman gets Rs 75 per day, find the number of men and women employed in the factory.

9. Solve by Cramer's rule: $4x+8y-5z=14$, $3x+7y-z =8$ and $x+y-z=0$.

E. Coordinate Geometry

1. A point divides internally the line joining the point (3,15) and (7,5) , in the ratio of 3:4.

2. Find the equation of the straight line through the point (2,3) and making equal intercepts on the axes.

3. Find the point of intersection of the straight line $x-3y+4=0$ and $7x+4y+8=0$.

4. Show that the triangle formed by joining the co-ordinates of the two points (4,3) and (5,0) with the origin is an isosceles triangle.

5. Find the equation to the locus of a point which is always equidistant from the points (a+b ,a-b) and (a-b, a+b).

6. Determine the equation of the straight line with the gradient $-\frac{3}{2}$ and which is concurrent with the lines $4x+3y-7=0$ and $34x+5y-1 =0$.

7. If the points (-2,-1), (1,0),(x,3) and (1,y) represent the vertices of a parallelogram. Find the value of x and y.

8. For what value of k will the point (1,-2) lie on the curve $x^2+y^2+kx-4y-15=0$?

9. Find the co-ordinates of a point of trisection of the line joining the points (1,-2) and (-3,4).

10. Find the equation of straight line passing through the point (3, 1) and point of intersection of the $3x+y-2=0$ and $5x+2y-3=0$.

F. Logarithms

1. Using 4 figure log table evaluate: $\frac{\sqrt[3]{42.75}}{(3.678)^2}$.

2. Solve for x: $3692=(1.075)^{15} \times x$.

3. Calculate using four -figure log table: $\frac{38.54 \times \sqrt[3]{0.03577}}{\sqrt{0.5164} \times 431.2} + \sqrt{16}$.

4. Find the value of $\sqrt[4]{(10.1)^2 + (16.4)^2}$.

5. Show that $\log(1+2+3) = \log 1 + \log 2 + \log 3$.

6. Solve the following equation: $3^{4x-1} = 5 \cdot 2^{x+1}$.

7. Without logarithmic table, find the value of

$$\log \frac{81}{8} - 2 \log \frac{3}{2} + 3 \log \frac{2}{3} + \log \frac{3}{4}$$

8. Using four figure log table, evaluate $\sqrt[7]{\frac{1}{0.8176 \times 36.21}}$.

9. Find the value of : $\frac{23.1 \times 2.56}{\sqrt[3]{52.89}} - 3.142 \times \sqrt{\frac{98.1}{32.2}}$.

10. Find the value of x: $340 \times \left(1 + \frac{x}{100}\right)^7 = 621$.

G. Function and Limit

1. In a manufacturing a product, a firm invest two types of cost. A fixed cost of Rs40,000 is invested regardless the number of item produced . In addition, each item produced cost Rs28. Items produced are sold at the rate of Rs.35.

i) Find the total cost function and profit function.

ii) Find the total cost if 2000 items are produced.

2. A company sells x units of an item each day at the rate of Rs50. The cost of manufacturing each unit of an item is Rs36.50 and the distributor demands a charge of Rs 3.50 per unit . If the daily overhead charge is Rs2600, find the profit function. Also find the profit if 360 units of an item are produced and sold daily?

3. Find $\frac{f(a+h)-f(a)}{h}$ when $f(x) = 3x^2+x+1$.

4. Evaluate: $\lim_{x \rightarrow 0} \frac{\sqrt{3+x^2}-\sqrt{3-x^2}}{x^2}$.

5. Find the limit of : $\lim_{x \rightarrow \infty} (\sqrt{x+1} - \sqrt{x})$.

6. Prove that: $\lim_{x \rightarrow 1} \frac{x-\sqrt{2-x^2}}{2x-\sqrt{2+2x^2}} = 2$.

7. Prove that: $\lim_{x \rightarrow 1} \frac{\sqrt{x-1}+\sqrt{x-1}}{\sqrt{x^2-1}} = \frac{1}{\sqrt{2}}$.

8. Evaluate $\lim_{x \rightarrow 3} \frac{x^3+2x^2-14x-3}{x^2-x-6}$.

9. Evaluate: $\lim_{x \rightarrow 0} \frac{\sqrt{2+x}-\sqrt{2}}{5}$

10. It is given that $f(x) = \frac{ax+b}{x+1}$, $\lim_{x \rightarrow 0} f(x) = 2$ and $\lim_{x \rightarrow \infty} f(x) = 1$. prove that $f(-2)=0$.

Hotel Management

Short questions:

- 1) Define cooking and its process.
- 2) list out the kitchen equipment.
- 3) Define salad and its parts.
- 4) Explain KOT and make its sample.
- 5) Define mixed drinks with example.
- 6) make clean sample of A la carte table lay out.

Long questions:

- 1) Explain cooking method by moist heat medium
- 2) Classify the beverage and explain fermentation method

Financial Account

Attempt all questions

Q.No.1 What do you understand by inventory management?

Q.No.2 Distinguish between time rate and piece rate system of wage payment.

Q.No.3 What do you understand by machine hour rate?

Q.No.4 What do you mean by reconciliation statement of cost and financial account?

Q.No.5 The following details have been obtained from the cost record of Asian Paints Limited:

Stock of raw materials (July 1,2004).....	Rs.75,000.	Stock of raw materials (July 31,2004).....	Rs.91,500.
Direct Wages.....	Rs.52,500	Indirect wages.....	Rs.2,700.
Sales.....	Rs.2,11,000	Work in progress on July 1,2004.....	Rs.28,000.
Work in progress on July 31,2004.....	Rs.35,000	Purchase of raw materials.....	Rs.66,000.
Factory rent, rates & power.....	Rs.15,000	Depreciation of plant & machinery.....	Rs.3,500.
Expenses on purchase	Rs.1,500.	Carriage outward.....	Rs.2,500.

Advertising.....Rs.3,500. Office rent & taxes.....Rs.2,500.
 Travelling wages & commission.....Rs.6,500. Stock of finished goods(July 1 2004).Rs..54,000.
 Stock of finished goods(July 31,2004)..Rs.31,000.

Overhead are to be allocated tender as under:

1. Factory overhead: On the basis of direct labor cost.
2. Office and administrative overhead: On the basis of factory cost.
3. Selling and distribution overhead: On the basis of factory cost.

Following costs estimation were made for submitting the tender:

Direct material.....Rs,95,000.

Direct Wage.....Rs.65,000.

4. Profit: 25% on cost.

Required:

- a. Cost sheet statement
- b. Tender sheet.

6. On reconciliation of Financial and Cost Accounting, Following information were disclosed:

- a. Profit shown by Cost Account Rs. 80,000.
- b. Work overhead under recovered in Cost Account Rs.5,000.
- c. Office overhead under recovered in Financial Account Rs.10,000.
- d. Depreciation under charge in Cost Account Rs.6,000.
- e. A profit on sales of fixed assets was shown on Financial Account Rs. 5,000.
- f. Goodwill written off Rs. 6,500.
- g. Income tax paid Rs. 15,000.

Required: Reconciliation statement showing profit as per financial account

7. From the following information determine rate per machine hour.

Cost of machine.....Rs.1, 00,000.

Life of the machine.....10,000.

Salvage value at the end of life.....Rs. 20,000.

Repair and maintenance per month.....Rs. 4,000.

Power expenses per month.....Rs.8,000.

Consumable stores per month.....Rs.1,000.

Factory overhead.....Rs.45,000.

Running hours of machine per month.....775

8. a. Mr. Hari works 8 hours daily in Gorkha Department store. He is paid Rs.20 per hour as wages and he produces 40 units output per hour. Find his monthly remuneration under piece rate system assuming the working days in a month is 25 days.

b. The working hour of worker for a week is 40 hours. He worked 50 hours in a weeks. The normal wages rate is Rs.100 per hour and overtime is paid at 120% of the normal rate .

Required: Total earning of the worker.

9. a. A company makes a plan to sell 1,000. Cars in a year. The cost of each car is Rs.10,00,000. And it costs Rs.11,000 for processing one order. Interest on capital being 10% and rent, insurance of tax per month per car is Rs.10,000. Determine the no. of cars to be purchased at a time.

b. A company requires 800 units of certain equipment per year and it costs Rs.30 per unit. The rate of interest is 10% on capital. Insurance , taxes , rent etc being Rs. 1 per unit, the cost of placing one order is Rs.100.

Required: a. EOQ b. No. of order c. Total cost at EOQ.

C. You are given the following information:

Consumption per day 200 units to 400 units.

Lead time.....2 to 4weeks.

Working days in a week.....5 days.

Maximum stock level.....12,000 units.

Required: a. ROLb. ROQ.

10. The stores transactions for the last month are as under.

Date	particular	Units.
Jan 1	Opening stock @ Rs. 50 each	1,500.
Jan 5	Purchased @ Rs.55 each	2,000.
Jan 8	Return from factory @ Rs.60 each	1,000.
Jan 10	Issued	1,600.
Jan 15	Purchased @ Rs.65 each	2,000.
Jan 20	Shortage	100.
Jan 25	Received @ Rs.75	2,500.
Jan 28	Return from department @ Rs.70	1,800.

Required: Store ledger under FIFO method

Computer Science

Short Questions (Any six)

1. What is DBMS? Explain Data integrity with suitable example.
2. Describe normalization in database.
3. What is the role of DBA? Explain.
4. What is SQL? Describe the different types of SQL Statement.
5. Describe the star topology with suitable diagram.
6. What is optical fiber cable in networking system.
7. Define the mode of Communication with types.
8. Explain data types used in C language.

Long Questions (Any two)

1. Different between client- server and peer to peer network.
2. What is computer network? Mention the advantages and disadvantages of computer network.
3. What do you mean by data security? How it can be implemented. Also define Data and information.

Marketing

UNIT ONE

Short Questions

1. What is Market ? Explain the various concepts of Market .
2. What is Marketing mix? Explain its components .

Long Questions

1. What is Marketing ? Discuss the importance of Marketing to the consumer, firms and Society .

UNIT TWO

Short Questions

1. Point out type of Market and explain any three of them .
2. What is buying motives? Explain rational buying motives with suitable examples.
3. Define buying motives. explain patronage buying motives.

Long Questions

1. Who is institutional customer? Describe the buying process of institutional customer.
2. Describe the factors affecting individual and institutional buying decisions.

UNIT THREE

Short Questions

1. What is buying ? Explain the elements of buying .
2. What is selling ? Describe the various element of selling .
3. Describe the meaning and functions of transport.
4. Explain the meaning and types of warehouse.

Long Questions

1. What is transportation ? What are its features? Explain the factor affecting the selection of mode of transport .