**PSG COLLEGE OF ARTS & SCIENCE**
(AUTONOMOUS)

**BVoc DEGREE EXAMINATION DECEMBER 2024**
(Fifth Semester)

Branch - **FOOD PROCESSING TECHNOLOGY**

**MAJOR ELECTIVE COURSE – I : BASIC ACCOUNTING**

Time: Three Hours                 Maximum: 50 Marks

**SECTION-A (5 Marks)**
Answer ALL questions
ALL questions carry EQUAL marks        (5 x 1 = 5)

1   Goods returned by customer will be debited to which account?
    (i) Purchase a/c            (ii)Return inward
    (iii)Return outward        (iv) customer's a/c

2   The basic purpose of preparing trial balance is to
      (i) find out the profit of business
      (ii) show the financial status of business
      (iii) test the arithmetic accuracy of ledger
      (iv) net purchase of the business

3.   Expenses related to the sale of goods are shown in the _____.
    (i) Trading account       (ii) Trading profit and loss account
    (iii) Balance sheet        (iv) Profit and loss account

'4   Basic objectives of cost accounting is
    i) Tax compliance.       (ii) Financial audit
    (iii) Cost ascertainment       (iv) Profit analysis

5   The point of profit at which the total cost will be equal to total revenue is called
    (i) Margin of safety       (ii) Break-even point
    (iii) The profit lines       (iv) Prime cost

**SECTION - B (15 Marks)**
Answer ALL Questions
ALL Questions Carry EQUAL Marks       (5 x 3 = 15)

6   a    Trace the advantages of double entry book keeping
                    OR
   b.   Journalize the following transactions in the book of Mr. John and post them in ledger

| Date | Transactions | Amount(Rs) |
|------|-------------|------------|
| 1.3.2024 | Brought goods for cash | Rs 50,000 |
| 2.3.2024 | Sold goods for cash | Rs 1,0000 |
| 3.3.2024 | Brought goods for credit | Rs 38,000 |
| 5.3.2024 | Paid travel expenses | Rs 10, 000 |
| 7.3.2024 | Sold goods on credit to Mr.Patil | Rs 16,,000 |
| 9.3.2024 | Purchased furniture for cash | Rs 12,000 |

7   a    Discuss the procedure for posting and balancing of account.
                    OR
   b    Prepare the trial balance as per the following transactions.

| Capital | 2,00,000 | Debtors | 3,00,000 |
|---------|----------|---------|----------|
| Cash | 1,80,000 | Bank loan | 1,50,000 |
| Creditors | 1,00,000 | Purchases | 2,00,000 |
| Sales | 3,00,000 | Stock | 70,000 |

8   a    Narrate the characteristics of balance sheet.
                    OR
   b.   State the importance of preparing profit and loss account .

9   a   Outline the advantages and disadvantages of cost accounting.

OR

b   Ascertain the prime cost, work cost, cost of production, total cost and profit   from the  given expenses

| S.No | Particulars | Amount |
|------|-------------|--------|
| 1. | Direct material | 10,000 |
| 2. | Direct labour | 7,000 |
| 3. | Factory expenses | 3,000 |
| 4. | Administrative expenses | 1,600 |
| 5. | Selling expenses | 1,400 |
| 6. | Sales | 30,000 |

10  a. State the significance of break even analysis.

OR

b. Summarize the significance of marginal costing.

### SECTION -C (30 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks       (5 x 6 = 30)

11 a   Examine the steps followed in journalizing an account with  an example .

OR

b   Journalize the following transactions and post them to ledger

| 1.4. 2022 | Commenced business with capital | Rs 5,000 |
|-----------|--------------------------------|----------|
| 2.4.2022 | Purchased good from X | Rs 1,500 |
| 4.4.2022 | Paid to X in cash | Rs 1,450 |
| 10.4.2022 | Sold goods to Y | Rs    500 |
| 12.4.2022 | Received cash from Y in full settlement | Rs    450 |
| 15.4.2022 | Paid salary | Rs   400 |
| 17.4.2022 | Purchased furniture | Rs 1,000 |
| 19.4.2022 | Received interest | Rs    100 |
| 21.4.2022 | Deposited cash in bank | Rs 1,000 |
| 26.4.2022 | Paid wages | Rs    200 |
| 27.4.2022 | With draw cash from bank for personal use | Rs    100 |

12 a   Differentiate between balance sheet and Trail balance.

OR

b Prepare a Trial Balance with the following information:

| Bill payable | Rs 5,000 | Sales return | Rs 6,000 |
|--------------|----------|--------------|----------|
| Insurance | Rs 5,000 | Maintenance expense | Rs 5,000 |
| Investment | Rs 50,000 | Vendor payable | Rs 4,000 |
| Bank loan | Rs 20,000 | Outstanding salary | 7,000 |
| Rent | Rs 10,000 | Marketable security | 5,000 |
| Machinery | Rs 20,000 | Unearned revenue | 4,000 |

13 a   Discuss  the elements of final accounts.

OR

b  Prepare profit and loss account for the year ending 31.12.2022 and a balance sheet.

| S.No | Particulars | Amount (Rs.) |
|---|---|---|
| 1. | Gross profit | 21,05,000 |
| 2. | Trade expenses | 20,000 |
| 3. | Carriage on sale | 1,00,000 |
| 4. | Office salaries | 1,58,000 |
| 5. | Postage & Telegram | 7,200 |
| 6. | Office rent | 75,000 |
| 7. | Legal charges | 4,000 |
| 8. | Audit fee | 16,000 |
| 9. | Donation | 11,000 |
| 10. | Sun dry expenses | 3,600 |
| 11. | Selling expenses | 53,200 |
| 12. | Discount allowed | 30,000 |
| 13. | Lighting | 7,800 |
| 14. | Commission received | 8,400 |
| 15. | Bad debts | 12,000 |
| 16. | Discount | 6,000 |
| 17. | Interest on loan | 22,000 |

14 a  Differentiate between cost accounting and financial and state the advantages of cost accounting .

OR

b  The following particulars have been obtained from the cost records from the manufacturing concern in the year 2022 . Prepare the cost sheet

| .No | Particulars | Amount(Rs) |
|---|---|---|
| 1. | Materials used in manufacturing | 1,00,000 |
| 2. | Materials used in packing | 30,000 |
| 4. | Materials used in factory | 1500 |
| 5. | Wages | 31,500 |
|  | Lightening: office | 500 |
| 6. | Indirect expenses | 4,000 |
| 7. | Administrative expense | 2,500 |
| 8. | Rent: factory | 3,000 |
| 9. | Repair & renovation: factory plant | 3,500 |
| 10. | Consumable stores | 2,500 |
| 11. | Managers salary | 5,000 |
| 12. | Director's fee | 1,250 |
| 13. | Office stationery | 500 |
| 14. | Telephone charges | 125 |
| 15. | Postage & telegram | 250 |
| 16. | Salesman salary | 1250 |
| 17. | Travelling expenses | 500 |
| 18. | Advertising | 1250 |
| 19. | Warehouse charges | 500 |
| 20. | Sales | 1,89,500 |

Assume the product 's manufactured during the year have been sold to earn a profit of 20% on selling price

15 a  Explain the purchase and production budgets with examples.

OR

b  Discuss the advantages, limitations and applications of marginal costing.

Z-Z-Z                          END

# PSG COLLEGE OF ARTS & SCIENCE
## (AUTONOMOUS)

### BVoc DEGREE EXAMINATION DECEMEBR 2024
(Second Semester)

Branch – **FOOD PROCESSING TECHNOLOGY**

**FOOD PROCESS ENGINEERING**

Time: Three Hours

Maximum: 75 Marks

### SECTION-A (10 Marks)
Answer ALL questions

ALL questions carry EQUAL marks          (10 × 1 = 10)

| Question No. | Question | K Level | CO |
|---|---|---|---|
| 1 | The moisture content of biscuits compared to that of breads is <br> a. Lower <br> b. Higher <br> c. Same <br> d. None of the above | K1 | CO1 |
| 2 | The water activity of fresh fruits, vegetables, meats and milk falls in the range of <br> a. 0.97 to 0.99 <br> b. 0.90 to 0.95 <br> c. 0.85 to 0.90 <br> d. 0.80 to 0.85 | K2 | CO1 |
| 3 | In inclined draper, the major factor causing the separation of grain is: <br> a. Shape and size <br> b. Shape and surface texture <br> c. Shape and weight <br> d. Weight and size | K1 | CO2 |
| 4 | Indented cylinder separator separates the grains on the basis of: <br> a. Weight <br> b. Relative length <br> c. Length <br> d. All are correct | K2 | CO2 |
| 5 | Which drying method is best suited for heat-sensitive food products? <br> a. Sun drying <br> b. Spray drying <br> c. Drum drying <br> d. Vacuum drying | K1 | CO3 |
| 6 | Which equipment is commonly used for size reduction in food processing, particularly for grains and seeds? <br> a. Hammer mill <br> b. Homogenizer <br> c. Centrifuge <br> d. Wet Grinder | K2 | CO3 |
| 7 | What is the primary function of a belt conveyor in food processing? <br> a. To transport liquids between processes <br> b. To move food products in a continuous, horizontal flow <br> c. To sort and classify food products based on size <br> d. To remove moisture from food products | K1 | CO4 |

**Cont...**

| 8 | Which of the following application is a belt conveyor used for?<br>  a. Material transportation over long distances<br>  b. Material transportation within premises<br>  c. Material transportation for processing<br>  d. All of the above mentioned | K2 | CO4 |
|---|---|---|---|
| 9 | How pulsed electric field destroys microorganisms?<br>  a. Formation of large pores in the bacterial membrane<br>  b. Formation of large pores in the bacterial chromosomes<br>  c. Formation of large pores in the bacterial nucleus<br>  d. Formation of large pores in the bacterial mitochondria | K1 | CO5 |
| 10 | Which of the following is true about Sound Ultrasound?<br>  a. Generates mechanical energy to enhance chemical action on surfaces<br>  b. Scrubbing action loosens the dirt particles and cleans the food particle<br>  c. Both a and b<br>  d. None of the mentioned | K2 | CO5 |

## SECTION - B (35 Marks)
### Answer ALL questions
ALL questions carry EQUAL Marks     (5 × 7 = 35)

| Question No. | Question | K Level | CO |
|---|---|---|---|
| 11.a. | Explain the indirect methods of moisture measurement. | K2 | CO1 |
| | (OR) | | |
| 11.b. | Interpret the difference between moisture content and water activity and also list any 6 factors that influence the water activity of food products. | | |
| 12.a. | Freshly harvested wheat kernels contain mixed impurities. List out and relate the impurities with its suitable separators. | K2 | CO2 |
| | (OR) | | |
| 12.b. | Explain how the efficiency of separators is calculated and explain the different factors that affects its efficiency. | | |
| 13.a. | Illustrate the mechanism of drying with drying curves. | K2 | CO3 |
| | (OR) | | |
| 13.b. | Elaborate about any 2 size reduction equipments. | | |
| 14.a. | Classify the different conveying equipments used in food industries and explain about any one. | K2 | CO4 |
| | (OR) | | |
| 14.b. | Explain why shelling/ decortication is necessary and describe about any one hand operated decorticator with neat sketch. | | |

| 15.a. | Describe the working and principle of pulsed electric field with a neat schematic diagram. | K2 | CO5 |
| --- | --- | --- | --- |
| | (OR) | | |
| 15.b. | Explain the types of cold plasma generation methods. | | |

## SECTION -C (30 Marks)
### Answer ANY THREE questions
ALL questions carry EQUAL Marks     (3 × 10 = 30)

| Question No. | Question | K Level | CO |
| --- | --- | --- | --- |
| 16 | Why it is important to study about the engineering properties of food materials and also mention its applications. | K1 | CO1 |
| 17 | List out and explain the physical characteristics of seeds and mention the need for cleaning. | K2 | CO2 |
| 18 | List out and explain the different extrinsic parameter that affect the drying rate of food products. | K2 | CO3 |
| 19 | Identify the suitable conveying system for conveying paddy grains from one end to the other end of same floor. Explain its working with neat sketch. | K3 | CO4 |
| 20 | Identify the reason, why non-thermal methods are better than thermal methods of food processing. Also mention the limitations in using non-thermal methods. | K3 | CO5 |

Z-Z-Z   END

**PSG COLLEGE OF ARTS & SCIENCE**
(AUTONOMOUS)
**BVoc DEGREE EXAMINATION DECEMBER 2024**
(Third Semester)

**Branch - FOOD PROCESSING TECHNOLOGY**

## MATHEMATICS AND STATISTICS

Time: Three Hours                                    Maximum: 75 Marks

## SECTION-A (10 Marks)
Answer ALL questions
ALL questions carry EQUAL marks          (10 × 1 = 10)

| Module No. | Question No. | Question | K Level | CO |
|---|---|---|---|---|
| 1 | 1 | A square matrix A is said to be an ____ matix, if $A\bar{A}=\bar{A}A=I$, where I is a unit matrix. <br> (a) Diagonal  (b) Scalar <br> (c) Square  (d) Orthogonal | K1 | CO1 |
| | 2 | A matrix is said to be idempotent matix, if <br> (a) $A=\bar{A}$  (b) $A^2=\bar{A}^1$ <br> (c) $A^2=A$  (d) $\bar{A}=A$ | K2 | CO1 |
| 2 | 3 | The Arithmetic mean of n observations $x_1,x_2,\ldots\ldots x_n$ is given by <br> (a) $1/n \sum x_i^2$  (b) $1/N \sum x_i$ <br> (c) $1/n \sum x_i$  (d) $1/N\sum x_i^2$ | K1 | CO2 |
| | 4 | The least value of root mean square deviation is called <br> (a) Variance  (b) Mea <br> (c) Standard deviation  (d) Median | K2 | CO2 |
| 3 | 5 | The correlation coefficient lies between <br> (a) $-1\leq r\leq 1$  (b) $0\leq r\leq 1$ <br> (c) $-1\leq r\leq 2$  (d) $-1\leq r\leq 0$ | K1 | CO3 |
| | 6 | Probable error of r is <br> (a) $0.6745\ 1-r^2/\sqrt{n}$  (b) $0.6754\ 1+r^2/\sqrt{n}$ <br> (c) $0.6547\ 1-r^2/\sqrt{n}$  (d) $1-r^2/\sqrt{n}$ | K2 | CO3 |
| 4 | 7 | Which is Null Hypothesis <br> (a) $H_0:\mu \neq \mu_0$  (b) $H_0:\mu \neq \mu_0$ <br> (c) $H_0:\mu = \mu_0$  (d) $H_0:\mu = \mu_0$ | K1 | CO4 |
| | 8 | Standard Error for sample mean($\ddot{x}$) <br><br> (a) $\frac{\sqrt{n}}{\sigma}$  (b) $\frac{\sqrt{PQ}}{N}$  (c) $\frac{\sigma}{\sqrt{n}}$  (d) $\frac{\sqrt{pq}}{n}$ | K2 | CO4 |
| 5 | 9 | Chi-Square test formula <br><br> (a) $\sum (Oi - Ei)^2/Ei$  (b) $\sum (Oi - Ei)^2/Oi$ <br><br> (c) $\sum (Oi + Ei)^2/Ei$  (d) $\sum (Oi + Ei)^2/Oi$ | K1 | CO5 |
| | 10 | ANOVA in null hypothesis <br> (a) $H_0: \mu_1=\mu_2=\ldots\ldots= \mu_k=\mu$ <br> (b) $H_0: \mu_1\neq \mu_2\neq \mu_3=\ldots\ldots\neq \mu_k=\mu$ <br> (c) $H_1: \mu_1=\mu_2=\ldots\ldots=\mu_k=\mu$ <br> (d) $H_1: \mu_1 \neq \mu_2 \neq\ldots\ldots\neq \mu_k \neq \mu$ | K2 | CO5 |

**Cont...**

## SECTION - B (35 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** Marks    (5 × 7 = 35)

| Module No. | Question No. | Question | K Level | CO |
|---|---|---|---|---|
| 1 | 11.a. | Find $AA^T$ if $A = \begin{bmatrix} 1 & 2 & -2 \\ -1 & 3 & 0 \\ 0 & 2 & 1 \end{bmatrix}$ | K1 | CO1 |
| | | (OR) | | |
| | 11.b. | Find the conjugate of transpose matrix $(A^T)$ of the Matix $A = \begin{bmatrix} -i & 3+2i & -2-i \\ -3+2i & 0 & 3-4i \\ 2-i & -3-4i & 2i \end{bmatrix}$ | K4 | |
| 2 | 12.a. | Find the arithmetic mean of the following frequency distribution: <br> X : 1  2  3  4  5  6  7 <br> F : 5  9  12  17  14  10  6 | K1 | CO2 |
| | | (OR) | | |
| | 12.b. | In usual notation, we are given $n_1$=100, $\ddot{x}_1$=15 , $\sigma_1$=3, $n_2$=150, $\ddot{x}_2$=16, $\ddot{x}$=15.6. find $\sigma_2$=? | K6 | |
| 3 | 13.a. | Prove that Two independent variables are uncorrelated. | K1 | CO3 |
| | | (OR) | | |
| | 13.b. | Given regression equations: 8x-10y+66=0, 4x-18y=214 and variance of x=9 <br> i) the mean values of x and y <br> ii) the correlation coefficient between x and y | K5 | |
| 4 | 14.a. | A random sample of 500 apples was taken from a large consignment and 60 was found to be bad. Obtain the 98% confidence limits for the percentage of bad apples in the consignment. | K1 | CO4 |
| | | (OR) | | |
| | 14.b. | Write down the best procedure of hypothesis. | K3 | |
| 5 | 15.a. | Carry out the analysis of variance for the following table: | K3 | CO5 |
| | | (OR) | | |
| | 15.b. | The following table shows the distribution of goals in a foot ball match. <br> No. of goals: 0  1  2  3  4  5  6  7 <br> No.of matchs: 95  158  108  63  40  9  5  2. | K6 | |

Table in 15.a.:

| Varieties | chemists | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| A | 8 | 5 | 5 | 7 |
| B | 7 | 6 | 4 | 4 |
| C | 3 | 6 | 5 | 4 |

## SECTION -C (30 Marks)
Answer ANY THREE questions

ALL questions carry EQUAL Marks    (3 × 10 = 30)

| Module No. | Question No. | Question | K Level | CO |
|---|---|---|---|---|
| 1 | 16 | If $A = \begin{pmatrix} 1 & 2 & 3 \\ 2 & 4 & 6 \\ 3 & 6 & 9 \end{pmatrix}$ and $B = \begin{pmatrix} -1 & -2 & -4 \\ -1 & -2 & -4 \\ 1 & 2 & 4 \end{pmatrix}$<br>Prove that $AB \neq BA$. | K2 | CO1 |
| 2 | 17 | Explain Diagrammatic and Graphical Intra presentations of data. | K4 | CO2 |
| 3 | 18 | Calculate the correlation coefficient for the following heights (in inches) of fathers(x) and their sons(y).<br>X  65  66  67  67  68  69  70  72<br>Y  67  68  65  68  72  72  69  71 | K3 | CO3 |
| 4 | 19 | In Two large population there are 30 and 25 percent respectively of blue-eyed people. In this difference likely to be hidden in the two populations? | K5 | CO4 |
| 5 | 20 | A test was given to five students taken at random from the fifth class of three schools of a town: The individual scores are,<br><table><tr><td>School I</td><td>9</td><td>7</td><td>6</td><td>5</td><td>8</td></tr><tr><td>School II</td><td>7</td><td>4</td><td>5</td><td>4</td><td>5</td></tr><tr><td>School III</td><td>6</td><td>5</td><td>6</td><td>7</td><td>6</td></tr></table>Carry but the analysis of variance. | K6 | CO5 |

z-z-z                                    END