

- Q.4. Solve the following differential equations (any two) by using Laplace transform: $(46^{2/3})$
- (i) $Y'' + 2Y' + 5Y = e^{-t} \sin t$; $Y(0)=0$, $Y'(0)=1$
- (ii) $y''' - 3y'' + 3y' - y = t^2 e^t$, $y(0)=1$, $y'(0)=0$, $y''(0)=-2$
- (iii) $\frac{\partial y}{\partial t} = 2 \frac{\partial^2 y}{\partial x^2}$, where $y(0,t) = y(5,t) = 0$, and $y(x,0) = 10 \sin 4\pi x$.

SECTION-B

- Q.5. (a) Define direction ratio and direction cosines of a line. Prove that the angle $(16^{2/3})$ between the two diagonals of a cube is $\cos^{-1}(\frac{1}{\sqrt{3}})$.
- (b) Prove that, the straight lines whose direction cosines are given by the relations (20)
 $al+bm+cn = 0$, $fmn+gnl+hlm = 0$ are perpendicular if $\frac{f}{a} + \frac{g}{b} + \frac{h}{c} = 0$ and
 parallel if $\sqrt{af} \pm \sqrt{bg} = \pm \sqrt{ch}$.
- (c) Find the point in which the join of $(-9, 4, 5)$ and $(11, 0, -1)$ is met by the (10)
 perpendicular from the origin.
- Q.6. (a) Prove that the straight lines $(16^{2/3})$
 $\frac{x-a+d}{\alpha-\delta} = \frac{y-a}{\alpha} = \frac{z-a-d}{\alpha+\delta}$ and $\frac{x-b+c}{\beta-\gamma} = \frac{y-b}{\beta} = \frac{z-b-c}{\beta+\gamma}$, are co-planar and
 find the equation of the plane in which they lie.
- (b) Show that the equation to the plane containing the line $\frac{y}{b} + \frac{z}{c} = 1$; $x=0$ and (15)
 parallel to the line $\frac{x}{a} - \frac{z}{c} = 1$; $y=0$ is $\frac{x}{a} - \frac{y}{b} - \frac{z}{c} + 1 = 0$ and if $2d$ is the shortest
 distance then prove that $\frac{1}{d^2} = \frac{1}{a^2} + \frac{1}{b^2} + \frac{1}{c^2}$.
- (c) Show that the equations of spheres which pass through the circle $x^2+y^2+z^2 -$ (15)
 $2x+2y+4z-3 = 0$, $2x+y+z = 4$ and touch the plane $3x+3y = 14$ are
 $x^2+y^2+z^2+2x+4y+6z-11 = 0$ and $x^2+y^2+z^2-2x+2y-4z-3 = 0$.
- Q.7. (a) Define Gradient, divergence and curl of a vector. (15)
- (b) Define solenoidal and irrotational vector. Show that, $(16^{2/3})$
 $\underline{A} = (6xy + z^3)\hat{i} + (3x^2 - z)\hat{j} + (3xz^2 - y)\hat{k}$ is irrotational.
 Find ϕ such that $\underline{A} = \nabla\phi$.
- (c) If $\underline{F} = 3xy\hat{i} - y^2\hat{j}$, evaluate $\int_C \underline{F} \cdot d\underline{r}$ where C is the curve in the xy -plane (15)
 $y = 2x^2$ from $(0, 0)$ to $(1, 2)$.
- Q.8. (a) State and prove the Green's theorem. (16)
- (b) Evaluate $\iint_S (\nabla \times \underline{F}) \cdot \hat{n} ds$ for $\underline{F} = (y-z+2)\hat{i} + (yz+4)\hat{j} - xz\hat{k}$, where S is the (10)
 surface of the cube $x = y = z = 0$ and $x = y = z = z$.
- (c) State Gauss's Divergence theorem. Verify Gauss's Divergence theorem for $(20^{2/3})$
 $\underline{f} = (x^3 - yz)\hat{i} - 2x^2y\hat{j} + 2z\hat{k}$, taken over the cube bounded by the planes $x = 0$,
 $x = a$, $y = 0$, $y = a$, $z = 0$, $z = a$.

Subject: Civil Engineering

Paper : Engineering Mathematics-III (Math-201)

Time : 3 Hours

Full Marks: 280

Answer any THREE questions from EACH section. Use separate script for EACH section.
The figures in the right margin indicate full marks.

SECTION-A

Q.1. (a) Define the following with examples: (16)

- (i) Unitary matrix
- (ii) Hermitian matrix
- (iii) Nilpotent matrix
- (iv) Singular matrix

(b) Find the inverse of the matrix (15)

$$A = \begin{bmatrix} 1 & 1 & 3 \\ 1 & 3 & -3 \\ -2 & -4 & -4 \end{bmatrix}$$

(c) Define rank of a matrix. Find the rank of the following matrix (15^{2/3})

$$(i) A = \begin{bmatrix} 1 & -1 & 2 & -3 \\ 4 & 1 & 0 & 2 \\ 0 & 3 & 0 & 4 \\ 0 & 1 & 0 & 2 \end{bmatrix}$$

$$(ii) \begin{bmatrix} 1 & 1+i & -i \\ 0 & i & 1+2i \\ 1 & 1+2i & 1+i \end{bmatrix}$$

2 2 7 2 6
4 λ - 2 - 3 λ - 1
λ - 3

Q.2. (a) Find values of λ for which the following system of equations is consistent and has nontrivial solutions. (20)

$$\begin{aligned} (\lambda-1)x + (3\lambda+1)y + 2\lambda z &= 0 \\ (\lambda-1)z + (4\lambda-2)y + (\lambda+3)z &= 0 \\ 2x + (3\lambda+1)y + 3(\lambda-1)z &= 0 \end{aligned}$$

(b) Define eigen values and eigen vectors of a matrix. (26^{2/3})
Find the eigen values and the corresponding eigen vectors of the matrix

$$A = \begin{pmatrix} -2 & 2 & -3 \\ 2 & 4 & -6 \\ -1 & -2 & 0 \end{pmatrix}$$

Q.3. (a) Define Laplace transform. (15^{2/3})

Find $L\{F(t)\}$, if $F(t) = e^t$; $0 < t \leq 1$
 0 ; $t > 1$

(b) Find the Laplace transform of the following functions: (15)

$$(i) e^{-t} (3 \sinh 2t - 5 \cosh 2t) \quad (ii) e^T \sin^2 t, \quad (iii) t^2 e^T \sin 4t.$$

(c) Evaluate (any two): (16)

$$(i) L^{-1} \left\{ \frac{3p+7}{p^2-2p-3} \right\}, \quad (ii) L^{-1} \left\{ \frac{1}{\partial^2(\partial+1)^2} \right\}, \quad (iii) L^{-1} \left\{ \frac{2p^2-6p+5}{p^3-6p^2+11p-6} \right\}$$

2019-20

- Q.8. (a) Draw the shear and moment diagrams for the beam and determine the shear and moment as functions of x . Fig.Q.8(a). (20)

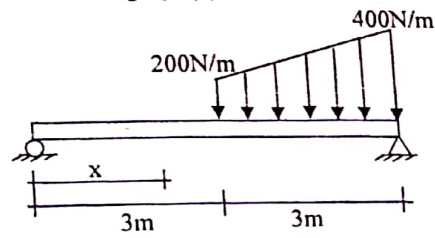


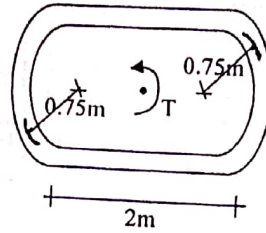
Fig.Q.8(a)

- (b) What is plastic moment and shape factor? Derive the expression of plastic moment. (15)

-:- The End -:-

- Q.6. (a) A portion of an airplane fuselage can be approximated by the cross-section shown in Fig.Q.6(a). If the thickness of its 2014-T₆-aluminium skin is 10 mm, determine the maximum wing torque T that can be applied if $\tau_{\text{allow}} = 4 \text{ MPa}$. Also, in a 4 m long section, determine the angle of twist. Assume $G = 48 \text{ GPa}$. (19)

NH + BCM



$$\gamma = \frac{TF}{I}$$

Fig.Q.6(a)

- (b) Draw moment and load diagrams corresponding to the shear diagram as shown in Fig.Q.6(b). Specify values at all change of load position and at all points of zero shear. (16)

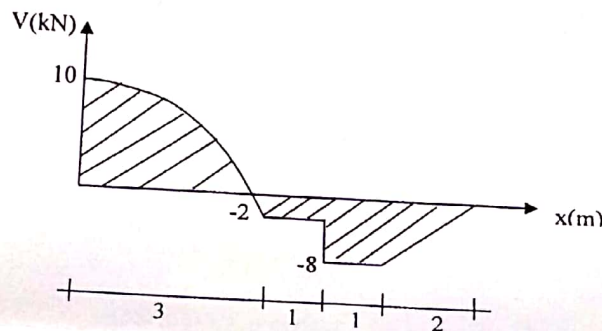


Fig.Q.6(b)

- Q.7. (a) The simply supported beam is subjected to the loading shown in Fig.Q.7(a). Determine the strain energy due to bending in the beam. (17)

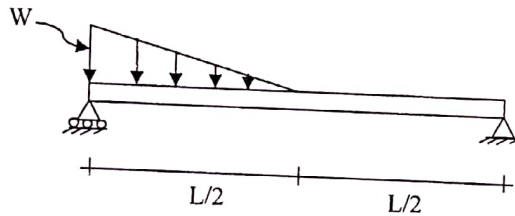


Fig.Q.7(a)

- (b) Determine the torsional strain energy in the steel shaft as shown in Fig.Q.7(b). The shaft has a radius of 30 mm. Assume $G = 83 \text{ GPa}$. (18)

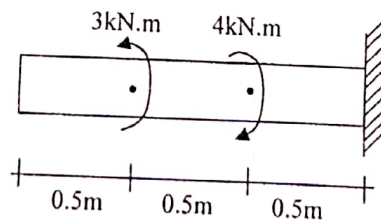


Fig.Q.7(b)

- Q.4 (a) The distributed load shown in Fig.Q.4(a) is supported by a wide-flange section of the given dimension. Determine the maximum value of w_0 that will not exceed a flexural stress of 10 MPa or a shearing stress 1 MPa. (20)

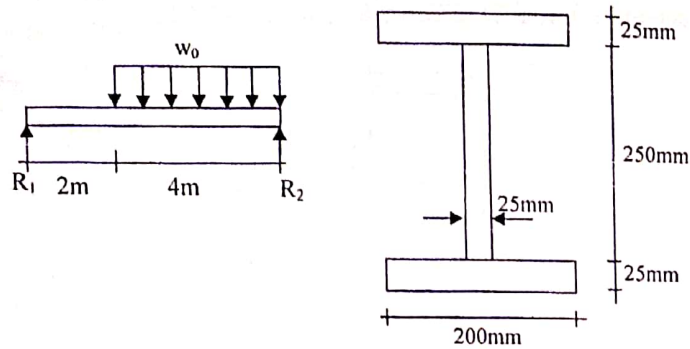


Fig.Q.4(a)

- (b) A rectangular steel beam, 2 in wide by 3 in deep, is loaded as shown in Fig.Q.4(b). Determine the magnitude and location of the maximum flexural stress. (15)

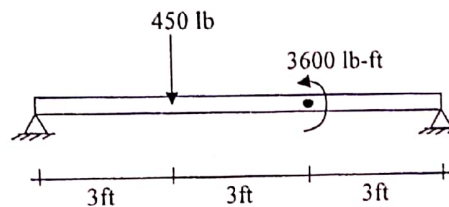


Fig.Q.4(b)

SECTION-B

- Q.5. (a) A cylindrical steel pressure vessel 400 mm in diameter with a wall thickness of 20 mm, is subjected to an internal pressure of 4.5 MN/m². (i) Calculate the tangential and longitudinal stresses in the steel, (ii) To what value may the internal pressure be increased if the stress in the steel is limited to 120 MN/m²? (18)
- (b) Two steel springs arranged in series as shown in Fig.Q.5(b) support a load P. The upper spring has 12 turns of 25 mm diameter wire on a mean radius of 100 mm. The lower spring consists of 10 turns of 20 mm diameter wire on a mean radius of 75 mm. If the maximum shear stress in either spring must not exceed 200 MPa, compute the maximum value of P and the total elongation of the assembly. (17)

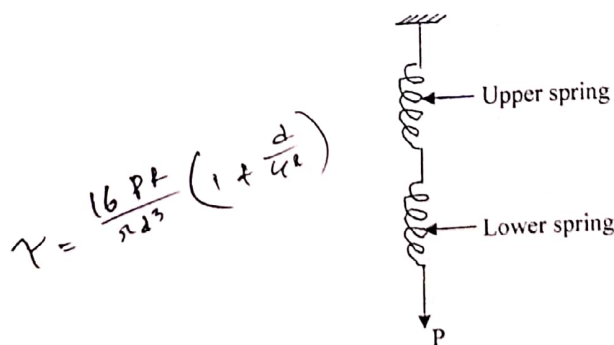


Fig.Q.5(b)

- (b) The rectangular plate is deformed into the shape of a rhombus shown by the dashed line. Determine the average shear strain at corner A with respect to the x and y axes. Shown in Fig.Q.2(b). (08)

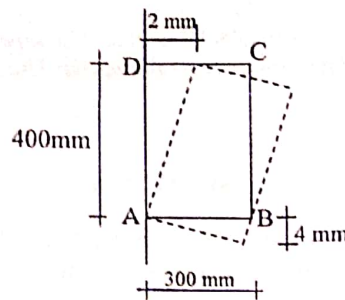


Fig.Q.2(b)

- (c) The steel wide-flange beam has the dimension shown in Fig.Q.2(c). Find the plastic moment and shape factor. (11)

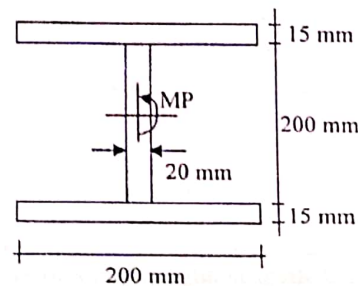


Fig.Q.2(c)

- Q.3. (a) Draw the shear and moment diagrams for the compound beam. Fig.Q.3(a). (17)

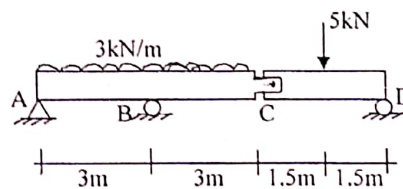


Fig.Q.3(a)

- (b) Determine the support reactions and draw the axial force, shear force and bending moment diagram for the frame. Joint B and C are rigid joints. Fig.Q.3(b). (18)

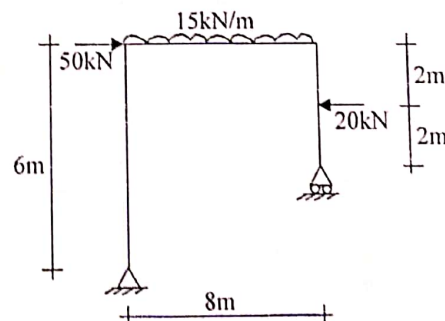


Fig.Q.3(b)

Subject: Civil Engineering
Paper : Mechanics of Materials-I (CE-211)
Time : 3 Hours

Full Marks: 210

Answer any THREE questions from EACH section. Use separate script for EACH section.
The figures in the right margin indicate full marks. Use standard value if needed.

SECTION-A

- Q.1. (a) The pins on the frame at B and C shown in Fig.Q.1(a) have a diameter of 6.25 mm. If these pins are subjected to double shear, determine the shear stress in each pin. (17)

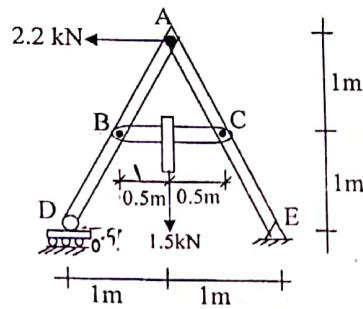


Fig.Q.1(a)

- (b) The bars of the truss each have a cross-sectional area of 900 mm^2 . If the maximum average normal stress in any bar is not to exceed 140 MPa. Determine the magnitude P of the loads as shown in Fig.Q.1(b) that can be applied to the truss. (18)

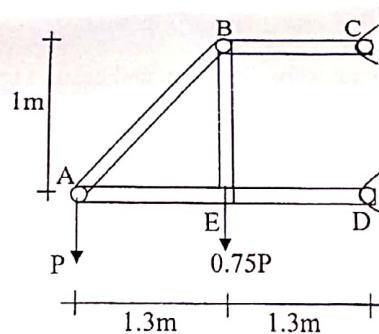


Fig.Q.1(b)

- Q.2. (a) Two blocks of wood, width w and thickness t, are glued together along the joint inclined at an angle θ as shown in Fig.Q.2(a). Show that the shearing stress on the glued joint is $\tau = P \sin 2\theta / 2A$, where A is the cross-sectional area. (16)

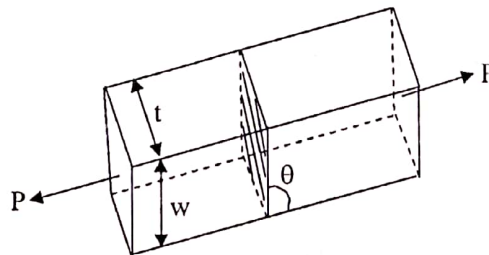


Fig.Q.2(a)

- Q.8. (e) Write a C++ program to calculate the reactions at supports of the beam shown in Fig.Q.8(a). (10)

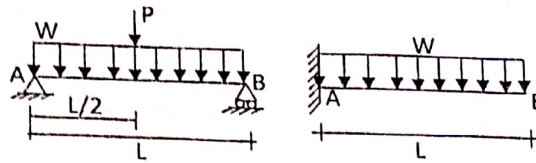


Fig.Q.8(a)

- (b) A computer program contains the following declarations and initial statements. (15)
`int i = 8, j = 5, float x = 0.005, y = -0.01, char C = 'c', d = 'd'`

Determine the value of each of the following expressions. Use the values initially assigned to variable for each expressions.

- $2 * ((i / 5) + (4 * (j - 3)) \% (i + j - 2))$
 - $(x > y) \&\& (i > 0) \! \! (j < 5)$
 - $k = (j == 5) ? i : j$
 - $i = (j > 0) ? j : 0$
 - $i \% = j$
- (c) Use truth table to determine whether the two following boolean expressions are equivalent. (10)
- $P \&\& (q \&\& r)$
 - $(P \&\& q) \&\& r$

--: The End -:

- (c) Calculate the velocity of train for the Q.4(b) at (i) $x = 270$ km distance, (ii) $x = 30$ km distance. (15)

SECTION-B

- Q.5. (a) How can you create a new name (data type) for an existing data type? What is the use of type cast operator? (10)
- (b) What are the advantages of using functions to modularize a program? Differentiate between keyword and Identifier. (10)
- (c) Write and run a program that reads the users age and then prints "you are a child." If the age < 18, "you are an adult." If $18 \leq \text{age} < 65$, & "you are a senior citizen." If age ≥ 65 . (15)
- Q.6. (a) Is it better to avoid test for equality with floating Point types? Justify your answer. (08)
- (b) Write C++ expressions for the following mathematical equations: (10)
- (i) $\sqrt{|\sin(a - |b|)|}$, (ii) $\sin^{-1} x + |e^{-x}| + \sqrt{3x}$, (iii) $ex - \frac{yz}{x}$, (iv) $\log_e(x + 3y)^3$.
- (c) What do you mean by fall through in switch statement? When it occurs? (07)
- (d) Convert the following for loop into a while loop: (10)
- ```
for (int i = 1; i ≤ n; i++)
 cout << i * i << " ";
```
- Q.7. (a) Write a C++ program to calculate the bending moment & shear force at a distance of  $x = \frac{L}{4}$  from the left support, where  $L$  = total length of the beam. (15)
- Following are the loadings on the beam:  
A uniform load of 'w' k/ft starting at a distance of  $\frac{L}{4}$  & ending at a distance of  $\frac{L}{4}$  (from right support). Also a concentrated load is acted at  $\frac{L}{2}$ . The beam is simply supported.
- (b) A hydrometer test gives the following data set:
- |        |      |      |    |    |    |    |    |    |    |     |     |     |
|--------|------|------|----|----|----|----|----|----|----|-----|-----|-----|
| T(min) | 0.15 | 0.30 | 1  | 2  | 4  | 8  | 15 | 30 | 60 | 120 | 240 | 480 |
| R      | 42   | 39   | 38 | 32 | 30 | 24 | 21 | 19 | 18 | 17  | 12  | 9   |
- However, the value of R needs to be corrected prior to use in further calculation R is modified according to the given equations: (12)
- $R_{\text{modified}} = -0.1352R + 16.64$ ; if  $t \leq 2.0$   
 $R_{\text{modified}} = -0.1182R + 15.80$ ; if  $2.0 < t < 40.0$   
 $R_{\text{modified}} = -0.00002R + 14.24$ ; otherwise write a C++ code to get the modified R values at different times.
- (c) What is the practical importance of inheritance used in C++ in Civil Engineering aspects? (08)

Subject: Civil Engineering

Paper : Computer Programming & Numerical Methods in Civil Engineering (CE-205)

Time : 3 Hours

Full Marks: 210

Answer any THREE questions from EACH section. Use separate script for EACH section.  
The figures in the right margin indicate full marks. Use standard value if needed.

SECTION-A

Q.1. (a) Which method is more convergent for solution to Numerical algebraic & Transcendental equation and why? (05)

(b) Solve the equation " $\sin x = 1+x^3$ ", using Newton-Raphson method. Correct your result upto fourth decimal place. (10)

(c) Solve the following equations by Gauss-Jordan method. (20)

$$\begin{aligned}x + 2y + z - w &= -2 \\2x + 3y - z + 2w &= 7 \\x + y + 3z - 2w &= -6 \\x + y + z + w &= 2\end{aligned}$$

Q.2. (a) What do you mean by Initial value problem and Boundary value problem? (05)

(b) The concentration of Pollutant bacteria 'c' in a lake decreases according to  $c = 75e^{-1.5t} + 20e^{-0.075t}$ . (15)

Determine the time required for the bacteria concentration to be reduced to 15 using the Newton-Raphson method with an initial guess of  $t = 6$  and a stopping criterion of 0.5%.

(c) Evaluate  $y(0.2)$  by Runge-Kutta method of fourth order, given that  $y'' - x(y')^2 + y^2 = 0$ ;  $y(0)=1$ ;  $y'(0)=0$ . (15)

Q.3. (a) Differentiate between partial pivoting and complete pivoting. (05)

(b) The table given below represents the calibration data of a compression Testing machine. (i) Which method of numerical analysis would you choose to find the calibration equation for the machine? (ii) Find the calibration equation in polynomial form. (15)

|              |   |      |     |     |     |      |
|--------------|---|------|-----|-----|-----|------|
| Dial Reading | 0 | 20   | 50  | 90  | 150 | 180  |
| Actual load  | 0 | 85.9 | 265 | 507 | 876 | 1059 |

(c) A student takes three courses (surveying, Math and Civil drawing) of credit hours 4, 3 and 1.5 respectively in a even semester. He gets equal scores 80% in civil drawing. If his average semester grade is 70%, calculate the scores in all the subjects using Gauss-Seidal Method. (15)

Q.4. (a) What are the rules that useful in selecting the interpolation formulae and also write down the properties of divided differences. (05)

(b) The velocity of a train is measured at different distance from starting, listed as following: (15)

|            |   |    |     |     |     |     |     |
|------------|---|----|-----|-----|-----|-----|-----|
| x(km)      | 0 | 50 | 100 | 150 | 200 | 250 | 300 |
| V(x) km/hr | 0 | 60 | 80  | 110 | 150 | 160 | 165 |

Estimate the Travel time of train to pass 300 km distance.



- Q.6. (a) What is stores ledger? Distinguished between Bin card and stores ledger. (10)
- (b) The particulars of receipts and Issue of material in a factory of S. Alam Oil Mills Ltd. in January 2018 were as under: (25)

|        |                                  |
|--------|----------------------------------|
| Jan-1  | Balance 100 units @Tk.1.10 p/u   |
| Jan-2  | Received 200 units @Tk.1.20 p/u  |
| Jan-10 | Issued 150 units                 |
| Jan-14 | Purchased 100 units @Tk.1.30 p/u |
| Jan-18 | Issued 150 units                 |
| Jan-23 | Returned to store 20 units       |
| Jan-26 | Purchased 100 units @Tk.1.40 p/u |
| Jan-27 | Purchase Return 10 units         |
| Jan-29 | Shortage 10 units                |
| Jan-31 | Issued 110 units                 |

Prepare stores ledger by using i) LIFO, ii) Weighted average method.

- Q.7. (a) What is overhead? Classify various types of overhead. (10)
- (b) A company with 03 production department and two service department have the following balances on a department distribution summary of expenses. (25)

| Production Department |           | Service department |           |
|-----------------------|-----------|--------------------|-----------|
| Manufacturing         | Tk.48,000 | Power              | Tk.6,000  |
| Assembly              | Tk.42,000 | Admin              | Tk.10,000 |
| Finishing             | Tk.36,000 |                    |           |

The expenses of the service department are charge out of the following basis:

| Service departments | Production departments |          |           | Service departments |       |
|---------------------|------------------------|----------|-----------|---------------------|-------|
|                     | Manufacturing          | Assembly | Finishing | Power               | Admin |
| Power               | 40%                    | 25%      | 15%       | -                   | 20%   |
| Admin               | 35%                    | 30%      | 20%       | 15%                 | -     |

Prepare secondary distribution summary by using (i) Repeated distribution method (ii) Simultaneous equation method.

$$x = 6000 + 0.2x$$

$$y = 10000 + 0.15x$$

- Q.8. (a) What is marginal costing? State the feature of marginal costing. (10)
- (b) The particulars of two plants producing an identical product with the same selling price are as under: (25)

| Capacity utilization | Plant A 70% (Taka) | Plant B 60% (Taka) |
|----------------------|--------------------|--------------------|
| Sales                | 3,00,000           | 1,80,000           |
| Variable costs       | 2,10,000           | 1,50,000           |
| Fixed cost           | 60,000             | 40,000             |

It has been decided to merge the two plants. The additional fixed expenses involved in the merger amount to Tk.4,00,000.

You are required to (i) Find the break-even-point of plant A and plant B before merger and the break-even-point of the merger plant, (ii) Find the capacity utilization of the integrated plant required to earn a profit of Tk.36,00,000.

Prepare secondary distribution summary by using (i) Repeated distribution method (ii) Simultaneous equation method.

--: The End --:

Q.4. (a) What is income statement? State the importance of income statement.

(b) Mr. Azad started his business on January-1, 2018 considering the following adjustments and related Trial balance, prepare financial statement-

Adjustments:

- Depreciation for the year, Furniture Tk.10,000 and Equipment Tk.25,000
- Supplies in hand Tk.75,000
- Insurance expired Tk.10,000 per month
- Service provided but unbilled Tk.15,000
- Salary dues Tk.5000
- Rent paid in advance Tk.10,000

Trial Balance  
December 3, 2018

|                        | Debit            | Credit           |
|------------------------|------------------|------------------|
| Cash in hand           | 1,14,000         | -                |
| Accounts Receivable    | 56,200           | -                |
| Supplies               | 1,25,000         | -                |
| Prepaid insurance      | 2,20,000         | -                |
| Equipment              | 3,00,000         | -                |
| Drawing                | 50,000           | -                |
| Salary                 | 2,30,000         | -                |
| Travel expenses        | 40,000           | -                |
| Rent expenses          | 1,40,000         | -                |
| Miscellaneous expenses | 20,000           | -                |
| Notes payable          | -                | 80,000           |
| Accounts payable       | -                | 2,65,000         |
| Azad's capital         | -                | 32,0000          |
| Service revenue        | -                | 70,0000          |
| Furniture              | 1,00,000         | -                |
| Land                   | 7,00,000         | -                |
| Unearned revenue       | -                | 1,50,000         |
| Mortgage payable       | -                | 5,80,000         |
| <b>Total</b>           | <b>20,95,200</b> | <b>20,95,200</b> |

#### SECTION-B

Q.5. (a) What is cost accounting? Distinguish between financial accounting and cost accounting. (15)

(b) Prepare a cost sheet from the following information: (20)

| Particulars                | Taka   |
|----------------------------|--------|
| Raw material used          | 25,000 |
| Work in Progress (opening) | 5,000  |
| Work in progress (closing) | 6,000  |
| Finished goods (opening)   | 13,000 |
| Finished goods (closing)   | 8,000  |
| Direct wages               | 10,000 |
| Direct expenses            | 5,000  |
| Factory cost               | 3,000  |
| Indirect labor             | 2,000  |

Office expenses on 10% of prime cost | selling expenses 3% on factory overhead | and profit 20% on sales are to be taken into account.



Subject: Civil Engineering  
Paper : Principle of Accounting & Costing (Hum-201)  
Time : 3 Hours

Full Marks: 210

Answer any THREE questions from EACH section. Use separate script for EACH section.  
The figures in the right margin indicate full marks.

SECTION-A

- Q.1. (a) What is Accounting cycle? Discuss the various steps of accounting cycle. (10)  
(b) What is GAAP? Describe any four of the concepts and conventions of Accounting. (15)  
(c) What is Accounting equation? Classify the various types of accounts with examples. (10)
- Q.2. (a) What is double entry system of Accounting? Discuss the rules for determination of Debit (dr.) and Credit (Cr.). (10)  
(b) Badal Brokerage Services was framed on May 1, 2018. The following transactions took place during the first month: (25)

|        |                                                                                                                                       |
|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| May 1  | Mr. Badal invested Tk.1,00,000 cash in the company as its sole owner.                                                                 |
| May 2  | Signed a two year rental agreement on a warehouse. Paid Tk.48,000 cash in advance for the first year.                                 |
| May 8  | Purchased furniture costing of Tk.70,000. A cash payment Tk.20,000 was made immediately and the remainder will be paid in six months. |
| May 15 | Total revenue earned was Tk.30,000 out of which Tk.10,000 in cash and Tk.20,000 on the account.                                       |
| May 17 | Collected Tk.5,000 from customer's on account.                                                                                        |
| May 20 | Received utility bills in the amount of Tk.400 to be paid next month.                                                                 |
| May 25 | Paid monthly salary of two employees total Tk.4,000.                                                                                  |

Prepare a journal book and a ledger book from the above transactions of Mr. Badal.

- Q.3. (a) What is Depreciation? State the causes of Depreciation. (05)  
(b) Discuss the importance of charging Depreciation of assets. (05)  
(c) Meghna Oil Company purchased a new machine on January-15 at a cost of Tk.110,000. The company estimated that the machine has scrap value of Tk.10,000 at the end of its useful life. The machine is expected to be used for 100,000 hours during its 4 year useful life. (25)

The machine used 20,000 hours in 2015; 15,000 hours in 2016; 30,000 hours in 2017 and 10,000 hours in 2018. Compute the Depreciation schedule under the following methods:

(i) Units activity method, (ii) Double declining balance method. (iii) Sum of the year Digit (SYD) method.

$$2 + \frac{1}{n} \times \text{current}$$

$$\frac{n+1}{n}$$

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