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4E1313

Roll No. \_\_\_\_\_

Total No. of Pages: 4

**4E1313**  
**B. Tech. IV - Sem. (Main) Exam., - 2022**  
**Civil Engineering**  
**4CE2 – 01 Advance Engineering Mathematics - II**  
**AG, CE, MI**

**Time: 3 Hours**

**Maximum Marks: 70**

*Instructions to Candidates:*

*Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL

2. NIL

**PART – A**

**(Answer should be given up to 25 words only)**

**[10×2=20]**

**All questions are compulsory**

- Q.1 A card is drawn from a well – shuffled pack of playing cards. What is the probability that it is either a spade or an ace?
- Q.2 When A and B are two mutually exclusive events such that  $P(A) = 1/2$  and  $P(B) = 1/3$ , find  $P(A \cup B)$  and  $P(A \cap B)$ .
- Q.3 If X and Y are two random variables such that  $E(X) = 3$  and  $E(Y) = 5$ , then what will be the value of  $E(2X + 4Y)$ ?

- Q.4 Write the Chebyshev's Inequality.
- Q.5 If mean of Poisson distribution is 3, then what is the value of variance?
- Q.6 What type of correlation exists when the values of two variables move in the same direction?
- Q.7 If  $r = 0.8$  and  $b_{xy} = 0.32$ , then what will be the value of  $b_{yx}$ ?
- Q.8 If  $y = 2x + 10$  is the best fit for 10 pairs of values  $(x, y)$ , by least square method and  $\sum y = 200$ ; then find the value of  $\sum x$ .
- Q.9 Which distribution is useful for large sample while testing for population means?
- Q.10 What is the meaning of the testing of the hypothesis?

### **PART – B**

**(Analytical/Problem solving questions)**

**[5×4=20]**

**Attempt any five questions (Word limit 100)**

- Q.1 In a bolt factory machines A, B and C manufactures respectively 25%, 35% and 40% of the total. Of their output 5, 4, 2 percentages are defective bolts. A bolt is drawn at random from the product and is found to be defective. What is the chance that it was manufactured by machine C?
- Q.2 A continuous random variable has the probability density function  $f(x) = kx^2e^{-x}$ ,  $x \geq 0$ . Find its second moment about mean.
- Q.3 A perfect cubical die is thrown a large number of times in sets of 8. The occurrence of 1 and 6 is called a success. In which proportion of the sets you expect 3 successes.
- Q.4 If  $P(X = 2) = 9P(X = 4) + 90P(X = 6)$  in the Poisson distribution then find its mean, variance and standard deviation.

Q.5 Fit a second degree parabola to the following -

x	0	1	2	3	4
y	1	1.8	1.3	2.5	6.3

Q.6 Two random variables have the following regression lines:  $3x + 2y - 26 = 0$  and  $6x + y - 31 = 0$ . Find the mean values and coefficient of correlation between x and y.

Q.7 A coin is tossed 400 times and it turns up head 216 times. Discuss whether the coin may be unbiased one.

### PART - C

(Descriptive/Analytical/Problem Solving/Design Questions) [3×10=30]

Attempt any three questions

Q.1 Let X and Y be continuous random variables having joint density function -

$$f(x,y) = \begin{cases} c(x^2 + y^2), & 0 < x < 1, 0 < y < 1 \\ 0, & \text{otherwise} \end{cases}$$

Determine -

- constant c,
- $P\left(X < \frac{1}{2}, Y > \frac{1}{2}\right), P\left(\frac{1}{4} < X < \frac{3}{4}\right), P\left(Y < \frac{1}{2}\right)$
- marginal density functions of X and Y
- whether X and Y are independent
- conditional distribution of X and Y

Q.2 Determine the binomial distribution's moment generating function and, as a consequence, its mean and variance.

Q.3 If the skulls are classified as A, B and C according as the length – breadth index is 75, between 75 and 80, or over 80. Using normal distribution find approximately the mean and standard deviation of a series in which A are 58%, B are 38% and C are 4%, given that –

$$f(t) = \frac{1}{\sqrt{2\pi}} \int_0^t \exp(-x^2/2) dx,$$

then  $f(0.20) = 0.08$  and  $f(1.75) = 0.46$ .

Q.4 Calculate rank correlation coefficient for the following data -

x	81	78	73	73	69	68	62	58
y	10	12	18	18	18	22	20	24

Q.5 In a year there are 956 births in a town A, of which 52.5% were males, which in town B and B combined, this proportion in a town of 1,406 births was 0.496. Is there any significant difference in the proportion of male births in the two towns?

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Total No. of Pages: 3

**4E1314**

**B. Tech. IV - Sem. (Main) Exam., - 2022**

**Civil Engineering**

**4CE3 – 04 Basic Electronics for Civil Engineering Applications**

**Time: 3 Hours**

**Maximum Marks: 70**

*Instructions to Candidates:*

*Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL

2. NIL

**PART – A**

**(Answer should be given up to 25 words only)**

**[10×2=20]**

**All questions are compulsory**

Q.1 What is the significance of the number system?

Q.2 The binary number 10101 is equivalent to decimal number.....

Q.3 State DeMorgan's theorem.

Q.4 What are the selection criteria for the transducer?

Q.5 Decimal 43 in hexadecimal, and BCD number system is respectively ..... and .....

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- Q.6 What are the selection criteria for the transducer?
- Q.7 What are the atmospheric errors in the sensors?
- Q.8 How many types of resolutions are in remote sensing?
- Q.9 What causes radiometric distortion?
- Q.10 How do you calculate FOV from IFOV?

## **PART – B**

**(Analytical/Problem solving questions)**

**[5×4=20]**

**Attempt any five questions (Word limit 100).**

- Q.1 How a PN junction diode is working? Draw and explain the V-I characteristics of PN diode with neat diagrams.
- Q.2 Explain in detail about classifications of the transducer.
- Q.3 Differentiate the following in brief -
- (a) Gross errors and systematic errors
  - (b) Absolute and relative errors
  - (c) Accuracy and precision
- Q.4 Draw and explain the capacitive transducer in detail. Also, mention its applications.
- Q.5 Discuss the following in brief -
- (a) Control surveys using GNSS
  - (b) Total station and traversing methods
- Q.6 Draw and explain the resistive transducer in detail.
- Q.7 Draw and explain the working of piezoelectric sensors/transducers.

## PART – C

(Descriptive/Analytical/Problem Solving/Design Questions) [3×10=30]

Attempt any three questions

- Q.1 What is data acquisition? Explain in detail about ADC & DAC.
- Q.2 Explain the construction and working of BJT. Discuss the CE configuration with the help of input and output characteristics.
- Q.3 Write a short note on applications of optical and microwave remote sensing techniques for Civil Engineering.
- Q.4 Discuss the following steps of Digital Image Processing in detail –
- (a) Pre-processing
  - (b) Enhancement
  - (c) Classification
  - (d) Accuracy assessment
- Q.5 Draw and explain the following using a truth table and logic diagrams –
- (a) J-K Flip - Flop
  - (b) R-S Flip - Flop
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Total No. of Pages: 4

**4E1315**  
**B. Tech. IV - Sem. (Main) Exam., - 2022**  
**Civil Engineering**  
**4CE4-05 Strength of Materials**

**Time: 3 Hours**

**Maximum Marks: 70**

*Instructions to Candidates:*

*Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL

2. NIL

**PART - A**

**(Answer should be given up to 25 words only)**

**[10×2=20]**

**All questions are compulsory**

- Q.1 Draw a neat diagram of fixed support. What type of support reactions are available at fixed support?
- Q.2 Write short notes on 'Slenderness Ratio'.
- Q.3 State Hooke's law. Write down different types of stresses and strains.
- Q.4 Why a hollow shaft is preferred over a solid shaft?

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- Q.5 Define the following terms: Thermal Stresses, Thermal Strains and Poisson's ratio.
- Q.6 Define 'point of contraflexure'.
- Q.7 Define principal planes and principal stresses and explain their uses.
- Q.8 What do you understand by principal of super position?
- Q.9 Define angle of twist, twisting moment and torsional rigidity.
- Q.10 Which is the effective method for finding out the deflection & why?

### PART – B

(Analytical/Problem solving questions)

[5×4=20]

Attempt any five questions (Word limit 100)

- Q.1 A rectangular beam 200 mm wide and 300 mm deep carries an UDL of 10 kN/m over a simply supported span of 6 m. Determine:
- (i) The maximum stress in the beam due to bending
  - (ii) The radius of curvature for the section where bending is maximum, if  $E = 200 \text{ GPa}$
- Q.2 Write the assumption of theory of simple bending and prove this relation.

$$\frac{M}{I} = \frac{\sigma}{y} = \frac{E}{R}$$

- Q.3 Derive the relation between load, shear force and bending moment.
- Q.4 Find the maximum torque that can be safely applied to a shaft of 200 mm dia, if permissible angle of twist is  $1^\circ$  in a length of 5 m and the permissible shear stress is  $45 \text{ N/mm}^2$ . Take modulus of rigidity ( $G$ ) =  $0.8 \times 10^5 \text{ N/mm}^2$ .
- Q.5 Derive an expression of the Euler's crippling load for a long column, when -
- (i) It has both ends hinged and
  - (ii) Both the ends are fixed

Q.6 Draw the typical shape of shear stress distribution for the following sections shown in Fig. 1:

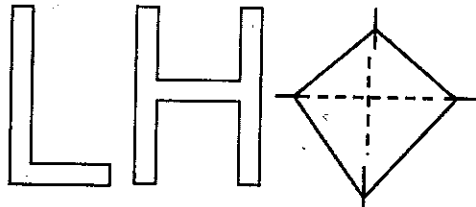


Fig 1

Q.7 An aluminum rod 22 mm diameter passes through a steel tube of 25 mm internal diameter and 3 mm thick. The rod and tube are fixed at a temperature 180° C. Find the stress in the rod and tube, when the temperature falls to 60° C.

Take  $E_s = 200 \text{ kN/mm}^2$ ;  $E_A = 70 \text{ kN/mm}^2$ ;  $\alpha_s = 12 \times 10^{-6} / ^\circ \text{C}$ ;  $\alpha_A = 12 \times 10^{-6} / ^\circ \text{C}$

### PART – C

(Descriptive/Analytical/Problem Solving/Design Questions) [3×10=30]

Attempt any three questions

- Q.1 A simply supported beam of rectangular cross section of dimension 150×300 mm is having span of 4.5 m. It is loaded with u.d.l. of 8 KN-m compute:
- Shear stress developed on a layer 60 mm above the natural axis of a section located at 1.5 m from the left support.
  - Maximum shear stress on the support at neutral axis.
- Q.2 What do you understand by principal stresses and principal planes? Derive the expression to obtain principle stresses under the action of two perpendicular direct stresses with state of simple shear applied to an elastic material at a certain point.
- Q.3 A steel bar of rectangular cross section 30 x 40 mm pinned at each end is subjected to an axial compressive load. The bar is 1.75 m long. Determine the buckling load and corresponding stress using Euler's formula. Take  $E = 200 \text{ GPa}$ .

Q.4 Draw the bending moment and shear force distribution diagrams for the beam shown fig. 2. Indicate the values of S.F. and B.M at all critical locations. Also give the value maximum shear force and maximum +Ve and -Ve bending moments and their location. Determine the points of contraflexure.

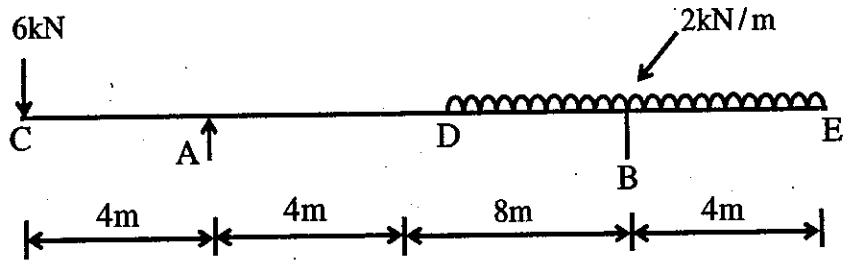


Fig.2

Q.5 A beam AB of 9 m span is simply supported at the ends and is loaded as shown in fig. Determine-

- (i) Deflection at C
- (ii) Maximum deflection and
- (iii) Slope at end A

Take  $E = 2 \times 10^5 \text{ N/mm}^2$  and  $I = 2 \times 10^7 \text{ mm}^4$ .

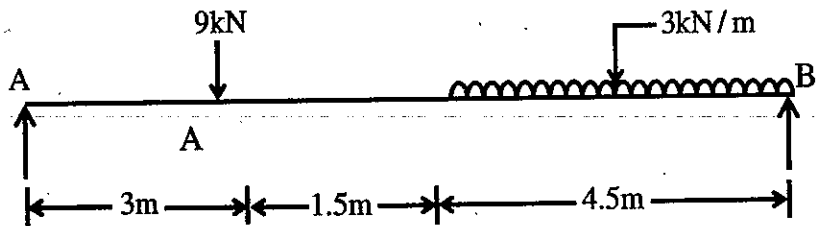


Fig.3

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Total No. of Pages: **3****4E1316****B. Tech. IV - Sem. (Main) Exam., - 2022****Civil Engineering****4CE4 - 06 Hydraulics Engineering****Time: 3 Hours****Maximum Marks: 70***Instructions to Candidates:*

*Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL2. NIL**PART – A****(Answer should be given up to 25 words only)****[10×2=20]****All questions are compulsory**

- Q.1 Define geometric similarity and kinematic similarity.
- Q.2 What is the difference between laminar flow and turbulent flow?
- Q.3 Define hydraulic jump.
- Q.4 Define hydraulic efficiency and mechanical efficiency of a turbine.
- Q.5 What is aquifers?
- Q.6 What is the purpose of the draft tube?
- Q.7 What is silt excluders?

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- Q.8 Define unit hydrograph.  
Q.9 Write down different types of rain gauge.  
Q.10 Define hydrologic cycle.

## **PART – B**

**(Analytical/Problem solving questions)**

**[5×4=20]**

**Attempt any five questions (Word limit 100)**

- Q.1 Derive equation for velocity distribution for turbulent flow in pipes.
- Q.2 A rectangular channel of width, 4m is having a bed slope of 1 in 1500. Find the maximum discharge through the channel. Take value of  $C = 50$ .
- Q.3 Describe main parts of a centrifugal pump.
- Q.4 What do you mean by run-off? Discuss different factors affecting run-off.
- Q.5 Write a short notes on the following –
- (A) Estimation of channel losses
  - (B) Silt control in canals
- Q.6 Find the slope of the free water surface in a rectangular channel of width 20m, having depth of flow 5 m. The discharge through the channel is  $50\text{m}^3/\text{s}$ . The bed of the channel is having a slope of 1 in 4000. Take the value of Chezy's constant  $c = 60$ .
- Q.7 A nozzle of 50mm diameter delivers a stream of water at 20m/sec perpendicular to a plate that moves away from the jet at 5m/s.
- Find –
- (i) The force on the plate
  - (ii) The work done
  - (iii) The efficiency of jet

## PART – C

(Descriptive/Analytical/Problem Solving/Design Questions)      [3×10=30]

Attempt any three questions

Q.1 Using Buckingham's  $\pi$  theorem, show that the velocity through a circular orifice is given

$$\text{by } V = \sqrt{2gh} \phi \left[ \frac{D}{H}, \frac{\mu}{\rho g H} \right],$$

Where H is the head causing flow, D is the diameter of the orifice,  $\mu$  is the co-efficient of viscosity,  $\rho$  is the mass density and g is the acceleration due to gravity.

Q.2 Derive conditions for most economical trapezoidal channel section.

Q.3 A 4m wide rectangular channel conveys 20m<sup>3</sup>/sec of water with a velocity of 5m/s. Check is there a condition for hydraulic jump to occur. **If the hydraulic jump takes place in down stream side, find the depth of flow after the jump.**

Q.4 Describe briefly the function of various **main component** of Pelton turbine with neat sketches.

Q.5 Describe various type of rain gauges for the measurement of rainfall with simple sketches.

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Roll No. \_\_\_\_\_

Total No. of Pages: 2

**4E1317**

**B. Tech. IV - Sem. (Main) Exam., - 2022**

**Civil Engineering**

**4CE4 – 07 Building Planning**

**Time: 3 Hours**

**Maximum Marks: 70**

*Instructions to Candidates:*

*Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL

2. NIL

**PART – A**

**(Answer should be given up to 25 words only)**

**[10×2=20]**

**All questions are compulsory**

- Q.1 What are the climatic zones of India?
- Q.2 Explain about plinth regulation.
- Q.3 What are the objectives of building planning?
- Q.4 Write down about noise control.
- Q.5 What are the louvers?
- Q.6 What do you understand by terms aspect & prospect?
- Q.7 Write about sun shading devices.

- Q.8 What is thermal comfort?  
Q.9 Explain the term global climate.  
Q.10 What do you understand by floor area ratio?

### **PART – B**

**(Analytical/Problem solving questions)**

[5×4=20]

**Attempt any five questions (Word limit 100)**

- Q.1 Discuss factors to be considered in “Vastu”. Design a residential building on a plot of 15m×25m as per Vastu.  
Q.2 Discuss the requirements of good lighting system in a building.  
Q.3 Write a short note on firefighting provision.  
Q.4 Discuss the functional requirements of a good ventilating system.  
Q.5 Discuss the criteria for thermal comfort. Explain uses of Bioclimatic chart.  
Q.6 What do you understand by Building By-laws?  
Q.7 Discuss various factors affecting orientation of building.

### **PART – C**

**(Descriptive/Analytical/Problem Solving/Design Questions)**

[3×10=30]

**Attempt any three questions**

- Q.1 Discuss the different types of buildings in detail. Explain the criteria of site selection for a building.  
Q.2 Explain the term principles of planning. Discuss the various factors affecting the principles of planning.  
Q.3 Discuss in detail the acoustics and sound insulation of a building.  
Q.4 What is sun path diagram? Discuss any one method of drawing sun path diagram.  
Q.5 Discuss Roominess, Circulation, Flexibility and Privacy with respect to planning of a building.

**4E1318**

Roll No. \_\_\_\_\_

Total No. of Pages: **2****4E1318****B. Tech. IV - Sem. (Main) Exam., - 2022****Civil Engineering****4CE4 – 08 Concrete Technology****Time: 3 Hours****Maximum Marks: 70***Instructions to Candidates:*

*Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL2. NIL**PART – A****(Answer should be given up to 25 words only)****[10×2=20]****All questions are compulsory**

- Q.1 List the Bogue's compounds present in cement with its composition.  
Q.2 Write about heat of hydration.  
Q.3 What is the purpose of adding an air entraining admixture to concrete?  
Q.4 Differentiate between Nominal Mix and Design Mix.  
Q.5 What is Batching in concrete?  
Q.6 Define Laitance.  
Q.7 Name any four properties of hardened concrete.  
Q.8 On what circumstances high grade concretes are utilize effectively?  
Q.9 What is the use of IS 383?  
Q.10 Name the admixture used for quick setting of concrete.

## **PART – B**

**(Analytical/Problem solving questions)**

**[5×4=20]**

**Attempt any five questions (Word limit 100)**

- Q.1 Explain initial and final setting time of cement.
- Q.2 What is curing of concrete and its significance?
- Q.3 Differentiate between accelerators and retarders.
- Q.4. Classify the aggregate and its important role in concrete.
- Q.5 Discuss the tests for workability of concrete.
- Q.6 Describe the durability of concrete.
- Q.7 Explain the effect of GGBFS on concrete properties.

## **PART – C**

**(Descriptive/Analytical/Problem Solving/Design Questions)**

**[3×10=30]**

**Attempt any three questions**

- Q.1 Explain the hardening and strength gaining of cement.
- Q.2 Find the quantity of Cement, Coarse Aggregate and Fine Aggregate in Kg/m<sup>3</sup> by IS method for the following requirements:
  - (a) Characteristics compressive strength at 28 days: 25 N/mm<sup>2</sup>
  - (b) Maximum nominal size of aggregate: 20 mm
  - (c) Shape of aggregate: angular
  - (d) Slump requirement: 50 mm
  - (e) Sand Zone -II
  - (f) Free Water Cement Ratio: 0.55(for mild exposure, Reinforced Concrete)
  - (g) Specific Gravity of cement = 3.15, Coarse aggregate = 2.7, and Fine aggregate = 2.6
  - (h) Water absorption of Coarse aggregate = 0.5%, Fine aggregate = 1%
- Q.3 How will you determine the compressive strength of cement? Explain briefly the procedure.
- Q.4 Write short note of any two NDT method.
- Q.5 What are Super Plasticizers? How are these helpful in modifying the properties of concrete?

**4E1210**

Roll No. \_\_\_\_\_

Total No. of Pages: **2****4E1210****B. Tech. IV - Sem. (Back) Exam., - 2022****HSMC Civil Engineering****4CE4 - 07 Building Planning****Time: 2 Hours****Maximum Marks: 100****Min. Passing Marks: 30***Instructions to Candidates:*

*Attempt all five questions from Part A, four questions out of six questions from Part B and two questions out of three from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you find missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination (Mentioned in form No. 205)*

1. NIL2. NIL**PART – A****(Answer should be given up to 25 words only)****[5×2=****All questions are compulsory**

- Q.1 Define building.  
Q.2 What is the meaning of orientation?  
Q.3 Explain roominess and grouping.  
Q.4 Enlist the different types of buildings.  
Q.5 Discuss the necessity of fire fighting provisions in a building.

## **PART – B**

**(Analytical/Problem solving questions)**

**[4×10=40]**

**Attempt any four questions**

- Q.1 What are the criteria for location and site selection of a residential building? [10]
- Q.2 What is sun chart and how it is drawn? [10]
- Q.3 What is climate? Enlist the elements of climate. [10]
- Q.4 What are the orientation criteria for tropical climate? [10]
- Q.5 Discuss acoustical design of a cinema hall. Support your answer with neat sketch. [10]
- Q.6 Explain the layout of different components of a residential building as per the cardinal directions in Vastu. [10]

## **PART – C**

**(Descriptive/Analytical/Problem Solving/Design Questions)**

**[2×15=30]**

**Attempt any two questions**

- Q.1 Design and draw the plan of a residential building on a plot of 18 m × 27 m. Road is on the east side of the plot. [15]
- Q.2 What are the remedial treatments for sound insulation of walls, floors and ceilings? [15]
- Q.3 How light and ventilation condition shall be improved in a building? Discuss opening requirements for light and ventilation comfort. [15]
-

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4E1302

Roll No. \_\_\_\_\_

Total No. of Pages: **4**

**4E1302**

**B. Tech. IV - Sem. (Main) Exam., - 2022**

**Computer Science & Engineering (AI)**

**4CAI1 – 03 Managerial Economics and Financial Accounting**

**All Branches**

**Time: 3 Hours**

**Maximum Marks: 70**

*Instructions to Candidates:*

*Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination.  
- (Mentioned in form No. 205)*

1. NIL

2. NIL

**PART – A**

**(Answer should be given up to 25 words only)**

**[10×2=20]**

**All questions are compulsory**

- Q.1 “Managerial economic supports manager to take decision for successful implementation of economic strategies.” Comment upon this statement.
- Q.2 Define GDP and NNP concepts of national income.
- Q.3 What is meant by price elasticity?
- Q.4 Elaborate the term circular flow of economy. Who are the main players involve in the circular flow of economy?

- Q.5 What are the basic elements of demand and supply?
- Q.6 Write the concept of opportunity cost with one example.
- Q.7 Define Kinked demand curve and write one reason of price rigidity.
- Q.8 Differentiate between deductive and inductive methods of economics.
- Q.9 Discuss any two significant uses of cash flow statement.
- Q.10 What is meant by debt, liabilities and current assets in accounting?

### **PART - B**

**(Analytical/Problem solving questions)**

**[5×4=20]**

**Attempt any five questions (Word limit 100)**

- Q.1 Define the concept of managerial economics. What are the micro and macro scopes economics? Explain all in brief.
- Q.2 What is Law of demand? Draw the suitable diagram of demand curve and write determinants.
- Q.3 Elaborate the cost and output relations in short run and long run. What is the role Marginal cost in decisions?
- Q.4 How demand forecasting is useful for future decision making? Explain any two methods demand forecasting.



Q.5 Write the stages of production function. How manager can control the inputs in production?

Define your answer with suitable table of inputs and diagram.

Q.6 How price, output and profit can be determined in perfect competition? Draw suitable diagram.

Q.7 Sttelio Ltd. presents the following information and you are required to calculate funds from operations –

Profit and Loss Account

	₹		₹
To Operation Expenses	1,00,000	By Gross Profit	2,00,000
To Depreciation	40,000	By Gain on Sale of Plant	20,000
To Loss on sale of Building	10,000		
To Advertising Suspense Account	5,000		
To Discount Allowed	500		
To Discount on issue of Shares written off	500		
To Goodwill written off	12,000		
To Net Profit	52,000		
	2,20,000		2,20,000

## PART – C

(Descriptive/Analytical/Problem Solving/Design Questions) [3×10=

Attempt any three questions

- Q.1 Define circular flow of economy with suitable diagram. Which are the current economic problems are facing by nation after pandemic situation (Year 2020 - 2021)?
- Q.2 Define the term demand elasticity. What are the various degrees of elasticity? Define with diagram and example.
- Q.3 What is meant by least cost combinations in production function? Elaborate the properties of least cost combinations.
- Q.4 Why price is rigid in market? Give reasons. Draw Kinked demand curve and how price and output can be determined under Kinked demand curve.
- Q.5 Differentiate between –
- (a) Demand curve and Supply curve
  - (b) Explicit cost and implicit cost
  - (c) Static economy and Dynamic economy
  - (d) Monopoly market and Monopolistic market
  - (e) Cash flow statement and Fund flow statement.
-

3E1103

Roll No. \_\_\_\_\_

Total No of Pages: 3

**3E1103**

**B. Tech. IV - Sem. (Main) Exam., May - 2019**

**HSMC**

**Managerial Economics & Financial Accounting**

**All Branches**

**Time: 2 Hours**

**Maximum Marks: 80**

*Instructions to Candidates:*

*Attempt all five questions from Part A, four questions out of six questions from Part B and two questions out of three from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL

2. NIL

**PART – A**

**(Answer should be given up to 25 words only)**

**[5×2=10]**

**All questions are compulsory**

Q.1 GDP

Q.2 Giffen Goods

Q.3 Marginal Cost

Q.4 Perfect Competition

Q.5 Capital Budgeting

## **PART – B**

**(Analytical/Problem solving questions)**

**[4×10=40]**

**Attempt any four questions**

- Q.1 What is circular flow of economic activity? Explain the circular flow in four sector model.
- Q.2 Following table exhibits demand and supply condition of a commodity at different price levels –

Price (₹)	Demand (‘000/month)	Supply (‘000/month)
110	-	1000
100	40	900
90	80	800
80	120	700
70	160	600
60	200	500
50	240	400
40	280	300
30	320	200
20	360	100
10	400	-

- (a) Draw the demand and supply curves.
- (b) What is the equilibrium price and quantity?
- Q.3 “In perfect competition a firm is price taker”. Explain the statement with the help of suitable illustration.
- Q.4 What is Elasticity of Demand? What are the factors affecting the Elasticity of Demand?
- Q.5 What is Isoquant? Explain with the help of diagram.
- Q.6 Compute the Net Present Value of a project if it requires an initial investment ₹ 2,25,000 and is expected to generate the following net cash inflows.

Year 1	Year 2	Year 3	Year 4
₹ 95,000	₹ 80,000	₹ 60,000	₹ 55,000

The minimum desired rate of return is 12%.

## PART – C

(Descriptive/Analytical/Problem Solving/Design Question)

[2×15=30]

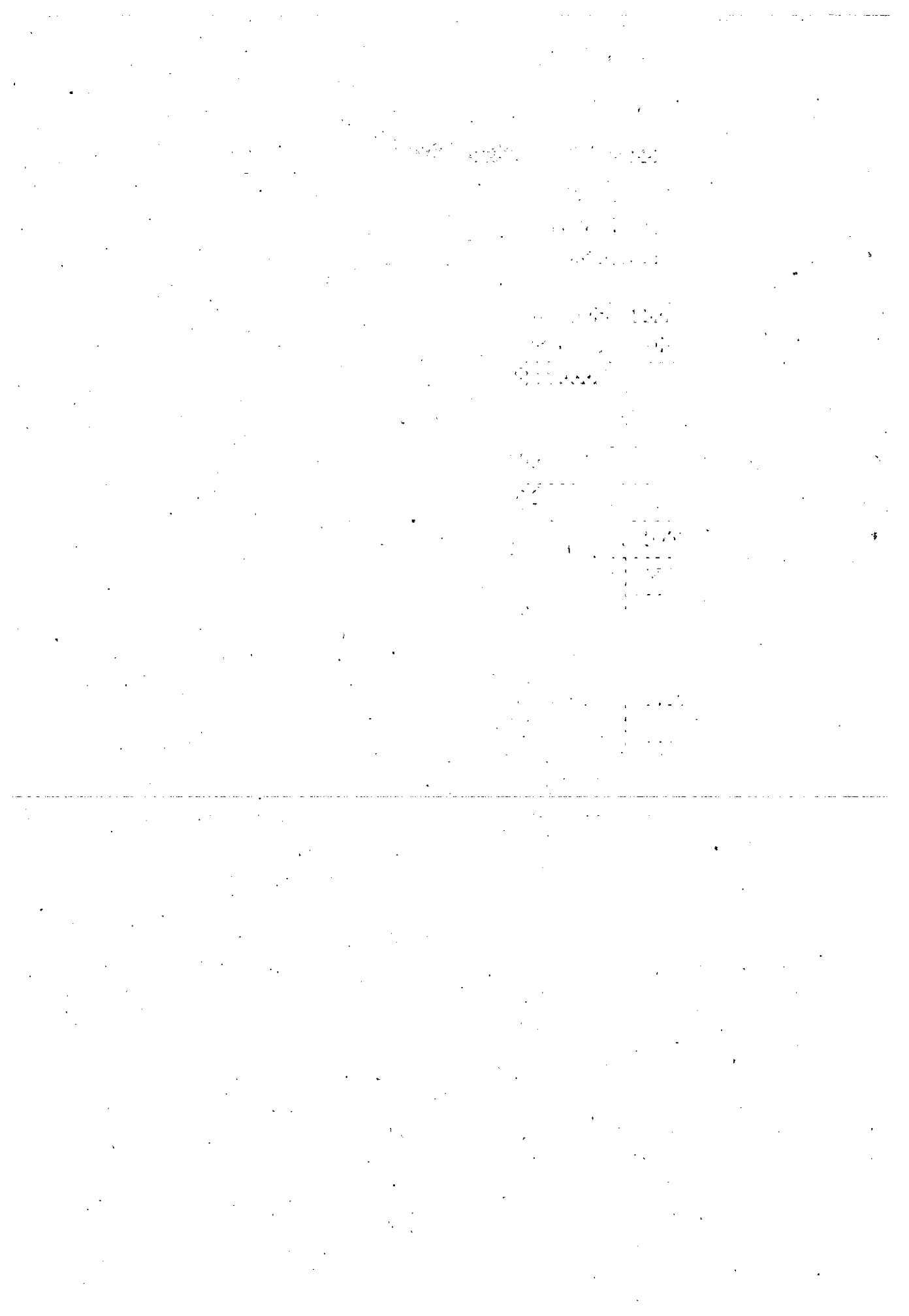
Attempt any two questions

- Q.1 Explain the various methods of measuring Nation Income.
- Q.2 What is meant by production function? Explain the 3 stages of production with the help of diagram.
- Q.3 Prepare the Trading and Profit and Loss account and a balance sheet from the following particulars for ABC firm as on 31 March 2018.

Account Title	Amount (₹)	Account Title	Amount (₹)
Sundry debtors	200000	Bills payable	86500
Bad debts	6000	Sundry creditors	48000
Trade expenses	2500	Provision for bad debt	7200
Printing and Stationary	7400	Return outwards	5500
Rent, Rates and Taxes	8600	Capital	500000
Freight	5000	Discount received	11540
Sales return	11200	Interest received	20000
Vehicle	30000	Sales	123000
Opening stock	100000		
Furniture and Fixture	22000		
Purchases	71000		
Drawings	34900		
Investments	92000		
Cash in hand	75000		
	136140		
	801740		801740

*Adjustments:*

- (1) Closing stock was valued ₹ 45000.
- (2) Depreciation charged on Furniture and Fixture @ 5%.
- (3) Depreciation charged on vehicle @ 10%.



3E1103

Roll No. \_\_\_\_\_

Total No. of Pages: 2

**3E1103**

**B. Tech. IV - Sem. (Back) Exam., - 2022**

**HSMC Aeronautical Engineering**

**4AN1-03/ Managerial Economics and Financial Accounting**

**Common for all branches**

**Time: 2 Hours**

**Maximum Marks: 80**

**Min. Passing Marks: 28**

*Instructions to Candidates:*

*Attempt all five questions from Part A, four questions out of six questions from Part B and two questions out of three from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205)*

1. NIL

2. NIL

**PART – A**

**(Answer should be given up to 25 words only)**

**[5×2=10]**

**All questions are compulsory**

Q.1 Circular flow of economic activity

Q.2 Demand forecasting

Q.3 Define marginal cost

Q.4 Oligopoly marker

Q.5 Capital budgeting

[3E1103]

Page 1 of 2

[560]

## **PART – B**

**(Analytical/Problem solving questions)**

[4×10=40]

**Attempt any four questions**

- Q.1 What is Managerial Economic? What are the principles of Managerial Economic?
- Q.2 What is National Income and methods of measuring National Income?
- Q.3 What is Price Elasticity? Explain types of Price Elasticity of Demand.
- Q.4 Discuss the different cost concepts relevant to managerial decision for Planning Control.
- Q.5 Describe the characteristics of Pure/Perfect Competition and Pure Monopoly.
- Q.6 What are Financial Ratios? Explain two Financial Ratios in detail.

## **PART – C**

**(Descriptive/Analytical/Problem Solving/Design Questions)** [2×15=30]

**Attempt any two questions**

- Q.1 What is Law Supply? What are the determinants of Supply? Explain four determinates in detail.
- Q.2 State and explain the law of variable proportions.
- Q.3 What is Financial Statement Analysis? What are the three basic tools for Financial Statement Analysis?
-



**4E1303**

Roll No. \_\_\_\_\_

Total No. of Pages: **3****4E1303**

**B. Tech. IV - Sem. (Main) Exam., - 2022**  
**Computer Science & Engineering (AI)**  
**4CAI1 – 02 Technical Communication**  
**All Branches**

**Time: 3 Hours****Maximum Marks: 7***Instructions to Candidates:*

*Attempt all ten questions from Part A. Five questions out of seven questions from Part B and three questions out of five from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination.  
(Mentioned in form No. 205)*

1. NIL2. NIL**PART – A****(Answer should be given up to 25 words only)****[10×2=****All questions are compulsory**

Q.1 What is technical communication?

Q.2 Write the forms and aspects of 'Technical communication'?

Q.3 What is the process of technical writing?

Q.4 Define note-making.

Q.5 What are the different discourse markers that can be used?

Q.6 What are the different types of resumes?

- Q.7 Combine the following sentence using an appropriate form of the verb given in the brackets.
- (a) Man and woman.....complementary to each other. (is/are)
  - (b) The leader as well as his brothers.....to the same tribe. (belong/belongs)
- Q.8 Mention the characteristics of the Report.
- Q.9 Find the errors in the following –
- (a) She can to drive.
  - (b) The house isn't enough big
- Q.10 Write short on the following –
- (a) Conference paper
  - (b) Journal

## **PART – B**

**(Analytical/Problem solving questions)**

**[5×4=20]**

**Attempt any five questions (Word limit 100)**

- Q.1 “The more you read, the more you become efficient in speaking a language.” Throw light on the connection of reading and speaking and tell how you can develop effective speaking skills.
- Q.2 Write in detail about the aspects of technical communication and throw light on the 7C's of effective technical communication.
- Q.3 Write about the challenges in the process of technical communication in detail.
- Q.4 Elaborate editing strategies to achieve appropriate technical style.
- Q.5 Define technical communication and its importance in the life of an engineering professional.
- Q.6 Elucidate the structure and format of technical articles.
- Q.7 Write notes on the following –
- (a) Features of a report
  - (b) Sales Letter

## PART – C

(Descriptive/Analytical/Problem Solving/Design Questions) [3×10=30]

Attempt any three questions

- Q.1 Create an email informing a group of people in the workplace about a co-worker of the whose management position has been downgraded to a staff position. Be clear, direct and concise in your delivery of the information and your explanation for it. Take into account workplace morale and the ethics of this decision. Your email should be at least 150 words long.
- Q.2 Your workplace is deciding how to upgrade the desktop computer systems. Prepare a report comparing three types of brands. Identify what categories you would use to compare three. Include what graphics might be necessary for this report. Include your final recommendation at the end of the analysis.
- Q.3 Write a job application in response to the advertisement for various faculty positions in the June 2019 issue of the Hindustan Times to apply for the post of Assistant Professor in Computer Science. Write a detailed resume to be enclosed with it.
- Q.4 (a) Discuss the various elements of a formal report.  
(b) Write brief notes on the following –  
(i) Significance of reports.  
(ii) Formal and non-formal reports.
- Q.5 With the advancement of technology, technical communication has also evolved and many unethical practices have been adopted by the professionals with a huge loss of reputation and assets. Throw light on the role of ethics and moral values in generating, analyzing and communication of technical information.
-

# THE HISTORY OF THE

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WILLIAM F. STANTON

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