

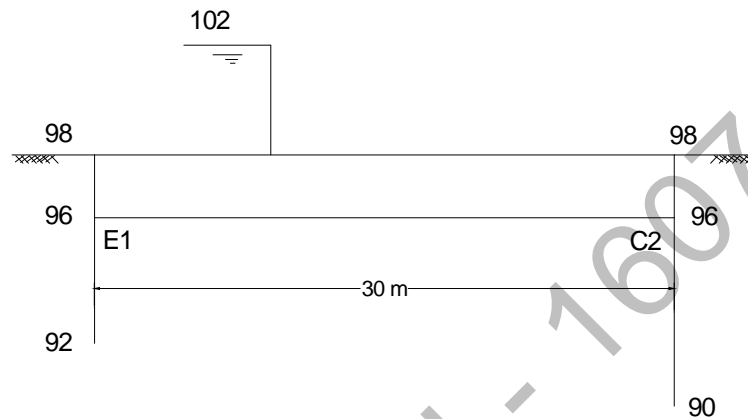
FACULTY OF ENGINEERING**B.E. 3/4 (Civil) II – Semester (New) (Suppl.) Examination, December 2017****Subject: Water Resources Engineering – I****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part A and any five questions from Part B.****PART – A (25 Marks)**

- 1 Differentiate between Automatic and non Automatic rainguage. (2M)
- 2 What is the method by which consistency of a rainguage is determined? (2M)
- 3 Define specific yield of Aaquifer
- 4 The Darcy velocity through a soil is 2 m /day and porosity is 20%, determined the actual velocity. (3M)
- 5 The flood discharge of a river is 200 m³/sec. What will be the length of water way of a weir? (3M)
- 6 The effective rainfall is 3 cm during a kor period of 16 days. The depth of water required is 20 cm for the crop, find the duty. (3M)
- 7 What is the exit gradient in case of diversion head works? (2M)
- 8 The flood discharge in a river is 150 m³/sec and length is 30 m, the head over the weir is 1.5m, what could be the co-efficient of discharge. (3M)
- 9 The type of canal which requires canal fall is (2M)
 - a) Contour
 - b) Ridge
 - c) Lined
 - d) Unlined
- 10 With the help of a neat sketch, show the components of a canal Syphon. (3M)

PAR T – B (5x10 = 50 Marks)

- 11 a) Determine the total depth of infiltration by Horton's equation for the following data, fo = 3 cm/ hr, fc = 0.5 cm/hr and k = 0.6 / hr, duration 6 hrs. (4M)
- b) The flood hydrograph for a catchment area of 10 sq.km is triangular is shape, the peak flow is 50 m³/sec occurring after 4 hrs from inception. The base period is 18 hrs. What is the effective rainfall? Also determine peak flow, if effective rainfall is 6 cm in the same duration. (6M)
- 12 a) Explain briefly different methods of irrigation. (4M)
- b) Determine the discharge in a field channel for the following data.
Field capacity = 0.18, permanent wilting point = 0.08, roof zone depth = 1.2 m, apparent specific gravity of soil = 1.6, assume readily available moisture is 75 % of total moisture available. The area of crop is 10 Hectares, duration of supply = 6 hrs. Assume overall efficiency as 70%. (6M)

- 13 Compute the uplift pressure at the given key points by the method of independent variables. And also calculate the exit gradient. (10M)



- 14 a) Explain in detail the design of Sarda type fall. (4M)
 b) Define proportionality, sensitivity and flexibility of an outlet, and obtain a relationship among them. (6M)
- 15 a) Explain in detail Hinds method of design in aqueduct transition. (6M)
 b) What are the factors influencing the selection of cross drainage works. (4M)
- 16 a) Design an unlined canal for the following data:
 $Q = 30 \text{ m}^3/\text{sec}$, $d_r = 0.8 \text{ mm}$, using Lacey's regime theory. (6M)
 b) With the help of a neat sketch, explain the various components of diversion head works. (4M)
17. Answer any two of the following: (5x2 =10M)
 a) Extreme value distribution in design flood.
 b) Head regulator
 c) Theim's steady state equation in case of radial flow into unconfined aquifier.

FACULTY OF ENGINEERING**B.E. 3/4 (Civil) II – Semester (Old) Examination, December 2017****Subject: Water Resources Engineering and Management – I****Time: 3 Hours****Max.Marks: 75**

Note: Answer all questions from Part A and any five questions from Part B.
Assume data suitably wherever necessary.

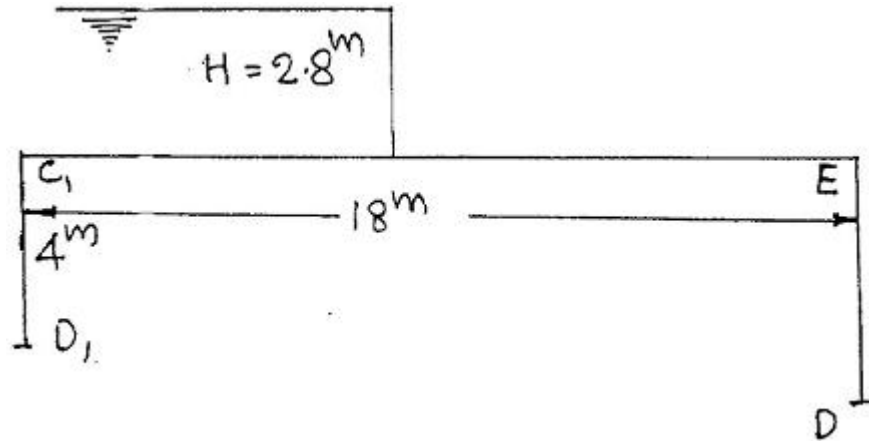
PART – A (25 Marks)

- 1 Give expression for testing adequacy of rain gauges and mention the terms in the expression. 3
- 2 List all the aquifer parameters that characterize an aquifer. 3
- 3 What type Irrigation systems do you recommend for Arid district like M'Nagar and wet District like Adilabad. 2
- 4 What is the philosophy behind Balanced Depth of Cutting? 2
- 5 What '*Delta*' would you consider appropriate for the crops of Paddy and Gingelly if you are the designer of a contour canal? 3
- 6 List key climatic, soil, agronomic factors that influence Irrigation interval. 3
- 7 Under what hydraulic condition would you select an aqueduct? 2
- 8 What is a Non-modular outlet? 2
- 9 What is Warabandi system and what is the advantage of such a system? 2
- 10 Enlist the uses of multi-purpose projects. 3

PART – B (5x10 = 50 Marks)

- 11 a) Draw a neat schematic diagram of Hydrological cycle and depict on it all the processes used in formulating Water Resources Projects. 5
 - b) A 30 cm dia borewell penetrates 25 m below static water table. After 24 hours of pumping @ 2000lpm, the water level at 100m away from the well is lowered by 0.6m and 30m away by 10m. Compute Transmissibility of aquifer. 5
- 12 a) Derive relation between Duty, Delta and Base period. 3
 - b) Design a lined canal for design discharge:600 cumecs, Bed fall:1:5000, side slopes of 1.5:1, permissible velocity:1.5m/sec, manning's 'n': 0.015. 7

- 13 a) Draw neat schematic diagrams of lay out a diversion head work and also cross section with appropriate titles for each significant item. 2+3
- b) Design the thickness of apron required at point E for the following diversion work on a permeable foundation using Khosla's theory, unit weight: 2.2 T/cum, Factor of Safety:1.2? 5



- 14 a) Write the design procedure of a vertical drop weir in steps. 5
- b) Show the relationship between flexibility, sensitivity and proportionality of outlets. 5
- 15 a) Explain in detail about functional requirements of management strategies in any project. 5
- b) State the significance of integrated water management. 5
- 16 a) Large sample of peak flood data reveals the following pattern of return periods. 5

Sl. No	Return Periods in years	Peak flood
1	50	15,500
2	100	25,800

Estimate magnitude of flood for a return period of 225 and 300 years.

- b) Develop the equation to calculate discharge from an unconfined aquifer. 5
- 17 Write a short note on the following:
- a) Design principles of notches. 5
- b) Differences between Kennedy's and Lacey's theory. 5

FACULTY OF ENGINEERING

BE 3/4 (EE/Inst./ECE) II Semester (New) (Supplementary) Examination, December, 2017

Subject: Managerial Economics and Accountancy

Time: 3 hours

Max. Marks: 75

Note : Answer all questions from Part-A & Any Five Questions from Part-B.**PART – A (25 MARKS)**

- 1 Define Managerial Economics 2
- 2 What is Income Demand 2
- 3 Define Duopoly 2
- 4 Explicit Cost and Implicit Cost 2
- 5 What is working capital? 2
- 6 What is contribution? 3
- 7 Business entity concept 3
- 8 What are the factors of production? 3
- 9 What are subsidiaries books? 3
- 10 Write journal entries for the following transactions: 3
 - a) Sold good for cash Rs. 2,000/-
 - b) Paid interest Rs. 3,000/-
 - c) Received cash from Vivek Rs. 5,000/-

PART – B (5 x 10 = 50 MARKS)

- 11 Explain the basic fundamental principles of Managerial Economics.
- 12 Define production functional discuss the law of returns with one variable input.
- 13 How price is determined under perfect competition? Explain.
- 14 Explain accounting conventions
- 15 Examine the following two proposals using pay back period method of capital budgeting
Initial investment for both the projects is Rs. 25,000/-.

Year	1	2	3	4
Proposal 1	12,500	12,500	12,500	12,500
Proposal 2'	10,750	12,250	12,500	13,500

- 16 The data has been taken from the books of L&T Co. as follows. Sales Rs. 3,00,000
fixed cost Rs. 90,000 variable cost Rs. 1,50,000.
Calculate: a) P/v Ratio b) break even point c) margin of safety d) margin of safety ratio.

17 From the following particulars prepare Trial Balance as on 31-12-2010.

Particulars	Rupees
Capital	25,000
Opening stock	6,200
Cash	1,700
Sundry Debtors	9,100
Purchases	61,300
Sales	93,600
Return outwards	1,000
Return inwards	500
Freight inwards	3,700
Freight outwards	7,200
Salaries	10,500
Rent	6,000
Sundry creditors	4,000
Commission received	100
Drawings	6,300
Furniture and fitting	10,800
Printing and stationary	1,200
Closing stock	12,000

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FACULTY OF ENGINEERING**BE 3/4 – (EE/Inst, ECE) - II Semester(Old) -Examination, December 2017****Subject: Managerial Economics and Accountancy****Time: 3 Hours****Max.Marks: 75****PART-A (25 Marks)**

- 1 What is case study. (2)
- 2 Explain Law of demand. (2)
- 3 Cobb – Douglas production function (2)
- 4 Differentiate fixed capital from working capital (2)
- 5 Explain double entry system of book keeping (2)
- 6 Opportunity cost principle – Discuss (3)
- 7 Calculate price elasticity if P₁ is Rs.20, P₂ Rs.30, Q₂ is 500 units & Q₁ is 700 units using Art elasticity method. (3)
- 8 Calculate Break even point if selling price per unit is Rs.40, variable cost per unit is Rs.20 and fixed cost Rs.10000. (3)
- 9 Give the formula for computing IRR (3)
- 10 Explain the significance of current ratio (3)

PART-B (50 Marks)

- 11 Illustrate the relationship of Managerial economics with other disciplines.
- 12 Discuss Law of Demand with its assumptions and exceptions.
- 13 Explain economics of scale.
- 14 Discuss the sources of long term and short term finance.
- 15 Prepare a Bank Reconciliation statement of Mohandas as on 31.3.2011.
Balance as per cash book Rs.14000
Cheques issued but not presented for payment Rs.3300
Insurance premium paid by the bank Rs.1800
Bank collected dividends Rs.300
Cheques of Rs. 1,000/- deposited but not cleared & credited Rs.900
- 16 Calculate PBD (Pay Back Period) and advice the acceptability of a project.
The initial outlay is Rs.75000. The expected life is 5 years. Estimated cash flows after taxes for project A & B are as follows:

<u>Year</u>	<u>Project A</u>	<u>Project B</u>
1	15000	12000
2	15000	14000
3	15000	16000
4	15000	20000
5	15000	22000

- 17 Prepare Trading & Profit & loss a/c for the year ending 30.9.2010 and a Balance sheet on that date.

Capital	90000	Bills Receivable	12000
Sales	110000	Debtors	7500
Purchase Returns	1000	overdraft	2500
Drawings	3000	Cash in hand	6200
Sales Returns	2000	Investments	14500
Advertisement	5000	Bad debts	600
Interest paid	800	Discount allowed	200
Wages	1600	Opening stock	14000

-2-

Rent paid	2200	Bills payable	7500
Buildings	41000	purchases	50000
Insurance	400		
Machinery	50,000		

Adjustments:

Closing stock Rs.35000
Outstanding wagesRs. 400
Depreciate buildings by 5%

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FACULTY OF ENGINEERING

BE. 3/4 (M/P) II – Semester (Old) Examination, December 2017

Subject: Refrigeration and Air Conditioning

Time: 3 Hours

Max. Marks: 75

*Note: Answer all Questions from Part-A, & any Five Questions from Part-B.***PART – A (25 Marks)**

1. Define Tonne of refrigeration and $c_o p$ for a refrigeration
2. Assign the numbers to the following refrigeration a) Methyl chloride (CH_3Cl) b) tetra chloromethane ($C_2H_4Cl_4$).
3. A Carnot refrigeration cycle absorbs heat at $270^\circ K$ and rejects it at $300^\circ K$. If the cycle is absorbing $113^\circ kJ/ min$ at $270^\circ K$, how many KJ of work is required per second?
4. What is the function of flash intercooler provided in a compound compression refrigerating system.
5. What are the advantages of Vapour absorption refrigeration system over vapour compression refrigeration system?
6. Draw the neat sketch of pulse tube refrigeration system.
7. State the factors that determine human comfort?
8. Explain the term effective temperature
9. Define dew point temperature and relative humidity
10. Define room sensible heat factor

PART – B (50 Marks)

11. A refrigeration machine of 6 tones capacity working on Bell- Coleman cycle has an upper limit of pressure of 5.2 bar. The pressure and temperature at the start of compression are 1 bar and $16^\circ C$ respectively the compressed air is cooled at constant pressure to a temperature of $41^\circ C$, enters the expansion cylinder. Both the expansion and compression processes to be isentropic with $\gamma = 1.4$ calculate
 1. Coefficient of performance
 2. Quantity of air circulated per minute
 3. Piston displacement of compressor and expander
 4. Bore of Compressor and expansion cylinders. The unit runs at 240 rpm and is double acting stroke length is 220 mm; and
 5. Power required to drive the unit for air take $C_p 1.003 kJ/KgK$ and $\gamma = 1.4$
12. A Vapour compression refrigerator uses R – 12 as refrigerant and the liquid evaporates in the evaporator at $-15^\circ C$. The temperature of this refrigerant at the delivery from the compressor is $15^\circ C$ when the Vapour is condensed at $10^\circ C$. Find the coefficient of performance if (i) $5^\circ C$ before expansion by throttling. Take specific heat at constant pressure for the superheated Vapour as $0.64 kJ/KgK$ and that for liquid as $0.94 kJ/Kg$.

The other proportion of refrigerant are as follows: (10)

Temperature °C	Enthalpy KJ/Kg		Enthalpy KJ/kgk	
	Liquid	Vapour	Liquid	Vapour
-15	22.3	180.88	0.0904	0.7051
10	45.4	191.76	0.1750	0.6921

- 13 a) Explain the working principle of Electrolux refrigerating system with the help of configuration diagram. (5)
- b) Define the following terms related to steam jet refrigerating system with the help of T-S and h-s diagrams (5)
- (i) Nozzle efficiency (ii) Entrainment efficiency
- 14 The following data refers to the office air conditioning plant having maximum seating capacity of 25 occupants
- Inside design conditions = 34°C DBT, 28°C WBT
- Outside design conditions = 24°C DBT, 50% R4
- Solar heat gain = 9120 W
- Latent heat gain per occupant = 105W
- Sensible heat gain per Occupant = 90 W
- Lighting load = 2300 W
- Sensible heat load from other sources = 11630 W
- Infiltration load = 14 m³ / min
- Assuming 40% fresh air and 60% of reticulated air passing through the evaporator coil and the bypass factor of 0.15, find the dew point temperature of the coil and capacity of the plant. (10)
- 15 a) Draw a neat diagram of air – conditioning system required for winter season. Explain the working of different components in the circuit. (6)
- b) Explain with line sketch of cascade refrigeration system. (4)
16. List the Various Spectrometric Processes and indicate on the Skelton psychometric chart and explain them. (10)
17. Explain the Various industrial applications of air conditioning system. (10)

FACULTY OF ENGINEERING

B.E. 3/4 (M/P) II – Semester (New) (supply) Examination, December 2017

Subject: Refrigeration and Air Conditioning

Time: 3 Hours

Max. Marks: 75

*Note: Answer all Questions from Part-A, & any Five Questions from Part-B.***PART – A (25 Marks)**

1. Name any four methods of producing refrigeration (2)
2. What are the desirable properties of refrigerants? (3)
3. Draw the vapour compression refrigeration cycle with T-s and P-h diagram (3)
4. List few applications low temperature refrigeration (2)
5. Define figure of merit related to thermo electric refrigeration (2)
6. Enumerate advantage and disadvantages of pulse tube refrigeration system (3)
7. What do mean by thermodynamic wet bulb temperature (2)
8. What factors affect the air conditioning load? (3)
9. Distinguish between central direct air – conditioning systems. (3)
10. What are the essential components of air conditioning systems? (2)

PART-B (50 Marks)

- 11 The atmospheric air at a pressure of 1 bar and temperature - 5°C is drawn in the cylinder of the compressor of a Bell – Coleman refrigerating machine. It is compressed isentropically to a pressure of 5 bar. In the cooler, the compressed air is cooled to 15°C, pressure remaining same. It is then expanded to a pressure of 1 bar in an expansion cylinder, from where it is passed to the cold chamber. Find (i) the work done per kg of air circulated (ii) COP of the plant. Assume law for expansion $pV^{1.2} = C$, for \ (10)
- 12 A refrigerant -12 Vapour compression plant producing 10 tonner of refrigeration operates with condensing and evaporating temperatures of 35°C and -10°C respectively. A suction line heat exchanger is used to sub cool the saturated liquid leaving the condenser. Saturated vapour leaving the evaporator is superheated in the suction line heat exchanger to the extent that a discharge temperature of 60°C is obtained after an isentropic compression. Determine: (a) The sub cooling achieved in the heat exchanger, (b) The refrigerant flow rate in Kg/s, (c) The Cylinder dimensions of Two cylinder compressor, If the speed is 900 rpm, Stroke to bore ratio is 1.1 and volumetric efficiency is 80%, (d) The COP of the plant, and (e) Power required to drive the compressor in kW.
Note : Take the properties from Refrigeration table and p-h charts (10)
- 13 a) Explain with neat sketch the working of simple vapour absorption refrigeration system (5)
b) List the merits and demerits of thermoelectric refrigeration system over other refrigeration system What are the fields of its applications? (5)

14 The following data refer to an air conditioning system for industrial process for hot and wet summer conditions:

Out door conditions = 30°C DBY and 65% RH

Required conditions. = 22°C DBT and 60% RH

Amount of out – door air supplied = $200\text{m}^3/\text{min}$

Coil due point temperature = 14°C

If the required conditions are achieved by first cooling and dehumidifying and then heating, find:

1. The capacity of the cooling coil and by – pass factor
2. The capacity of the heating coil and surface temperature of the heating coil if By-pass factor is 0.2 (10)

15 Explain with neat sketch the design consideration of year round air–conditioning system. (10)

16 a) Explain with neat sketch Li – Br water absorption system (5)

b) Sketch and explain two stage cascade refrigeration system and draw p–h diagram (5)

17 a) Describe with sketch the working of steam jet refrigeration (5)

b) Discuss about the following air conditioning systems.

(i) Humidifier, (ii) Dehumidifier, (iii) Filters (5)

FACULTY OF ENGINEERING

B.E. 3/4 (A.E.) II-Semester (NEW) SUPPL. EXAMINATION, December 2017

Subject: Finite Element Methods

Time: 3 Hours

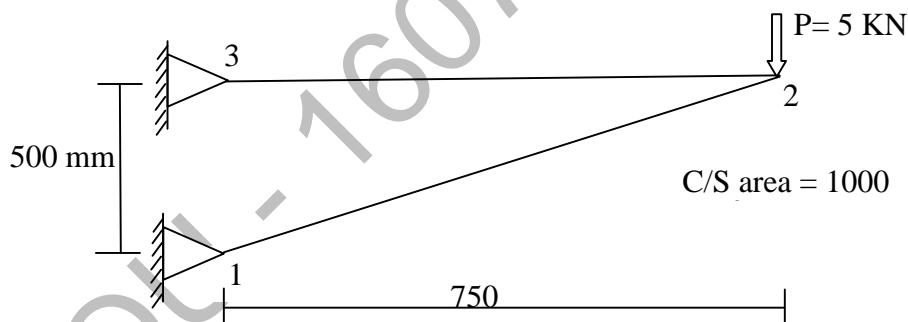
Max.Marks: 75

Note: Answer all questions from part – A & Any five questions from part - B**PART – A**

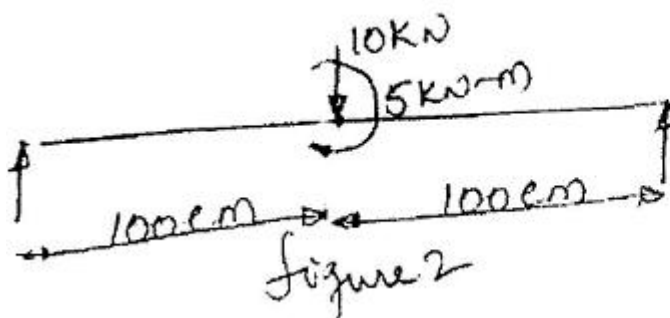
1. Define equilibrium and compatibility condition.
2. What are various weight residual methods?
3. Give properties of shape function.
4. Why a CST element so called?
5. Derive connection matrix for 1-D bar element.
6. Write characteristics of stiffness matrix.
7. Write the equivalent load vector of a beam subjected to uniformly varying load.
8. Write the stiffness matrix of a shaft element subjected to torsion.
9. Define eigen value and eigen vector.
10. Name two FEA software packages.

PART – B

11. Calculate the displacement and element stresses in a 50cm long tapered bar of C/S area 1000mm^2 at fixed end and 500mm^2 at the free end subjected to an axial compressive force of 10KN at the free end take $E=200\text{GPa}$.
12. Find the displacement at node 2 and the support reaction for the truss as shown in fig1 take $E=200\text{GPa}$



13. Calculate deflection and shear force for the beam as shown in fig2 .

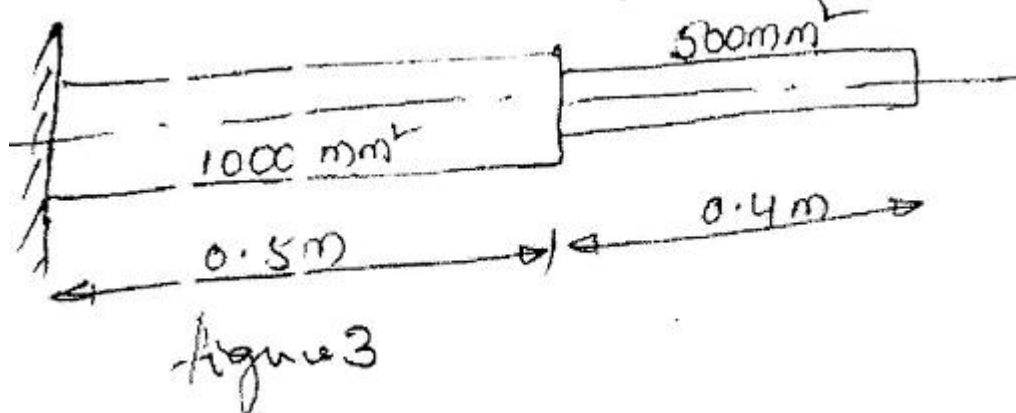


$$E = 200 \text{ GPa}$$

$$I = 40 \times 10^5 \text{ mm}^4$$

-2-

14. Derive jacobian matrix for triangular element with the (x,y) co-ordinates of the nodes are (1.5,2) , (7,3.5) and (4,7) at nodes i,j,k.
15. Derive a finite element equation for one dimensional heat conduction with free end convection.
16. Determine first two natural frequencies of longitudinal vibration of stepped steel bar as shown in fig3 and plot mode shapes.



17. Write a note on the following
- | | |
|--|------|
| a. Iso parametric , super parametric and sub arametric element | [4m] |
| b. Axi – symmetric solid triangle. | [2m] |
| c. Linear strain triangle (LST) | [2m] |
| d. Global stiffness matrix and elemental stiffness matrix. | [2m] |

FACULTY OF ENGINEERING
B.E. 3/4 (A.E.) II-Semester (Old) Examination, December 2017
Subject: Finite Element Analysis

Time: 3 Hours

Max.Marks: 75

Note: Answer all questions from part – A & Any five questions from part - B

PART – A (25 Marks)

1. Explain the features of finite element method.
2. Derive shape functions for quadratic element?
3. Give the expressions for strain – displacement, stress- strain relations?
4. Derive the material matrix for an Axi- symmetric element?
5. List the FEA soft wares and mention about its capabilities?
6. Derive the stiffness matrix for a frame?
7. Differentiate between lumped and consistent mass matrix.
8. Derive the temperature gradient matrix for 1-D linear element?
9. Differentiate geometric and material non – linearity?
10. Calculate capacitance matrix for 1-D unsteady state heat transfer problem?

PART-B (50 Marks)

11. Two bars made of different materials are connected as shown in figure1 the properties of the two bars are given by

$$E^{(1)} = 200\text{GPa} , \alpha \frac{15 \times 10^{-6}}{^{\circ}\text{C}} ; \text{weight per unit volume} = 0.06\text{N/Cm}^3$$

$$E^{(2)} = 75\text{ GPa} , \alpha 20 \times 10^{-6}/^{\circ}\text{C}; \text{weight per unit volume} = 0.025\text{N/cm}^3$$

If the temperature of two bar system is raised by 50°C . determine the displacements and element stresses developed in the two bars.

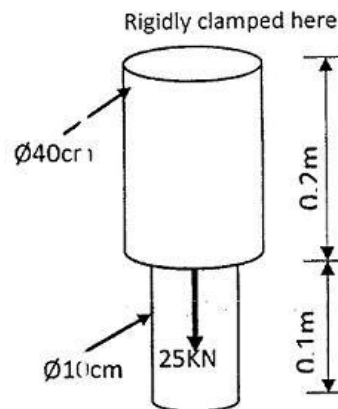


Fig. 1

12. Find the deflection and slopes for the beam shown in $E = 100\text{GPa}$, $I = 4 \times 10^{-4}\text{m}^4$.

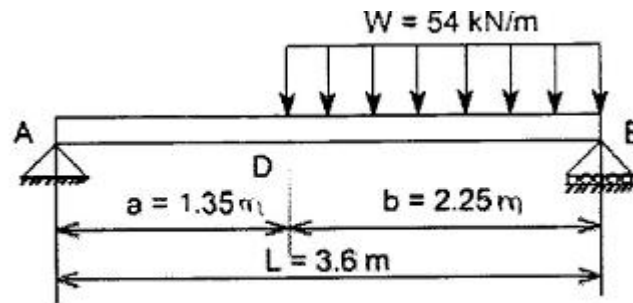


Fig.2

13. a) Derive conduction, convection and element load vectors for a one – dimensional steady state analysis.
- b) Calculate the temperature distribution in one dimensional fin as shown in fig 3 with two elements. Assume that convection heat loss occurs from the end of the fin.

$$K = \frac{3W}{\text{cm}^{\circ}\text{C}}, h = 0.1W/\text{cm}^2\text{.}^{\circ}\text{C}, \phi_{\infty} = 20^{\circ}\text{C}$$

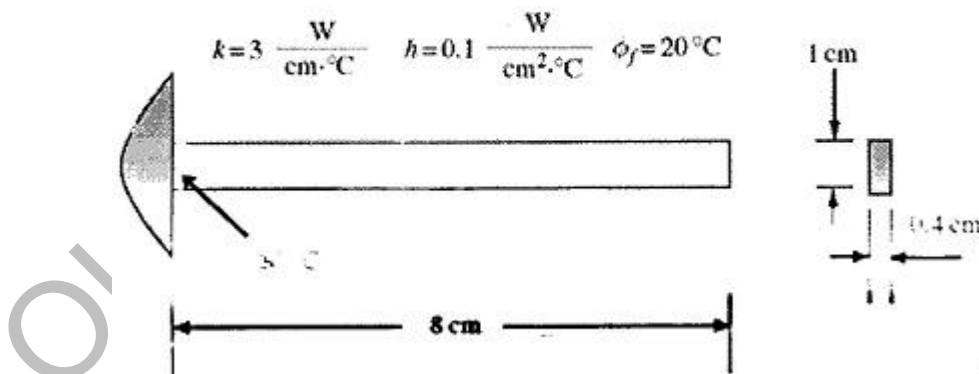
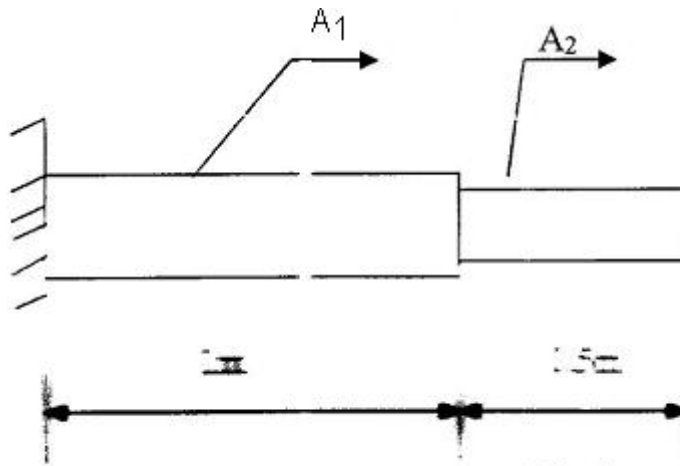


Fig.3

14. A long cylinder is subjected to an external pressure of 5 MPa and fitted on to a shaft of outer diameter of 100 mm. the outer diameter of the cylinder is 140 mm. using two elements of 20 mm length, formulate the element matrices for the cylinder with $E = 200\text{GPa}$, $\nu = 0.3$ and also find the nodal displacements.

15. Determine eigen value and eigen vector for the stepped bar as shown in fig 4.



$$E=80\text{GPa},$$

$$\rho =7850\text{kg/m}^3$$

$$A_1=400\text{mm}^2$$

$$A_2=200\text{mm}^2$$

Fig.4

16. The coordinates of each node of a four node quadrilateral element are 1(2,1); 2(5,2); 3(8,9); and 4(6,7). The displacement vector of the element is given as $\{q\} = \{0 \ 0 \ 0.13 \ 0 \ 0.25 \ 0.12 \ 0.18 \ 0.05\}^T$. find

- x, y coordinates of a point whose location in the master element is given by $\xi=0.5$ and $\eta = 0.6$.
- The u, v displacement of point p and the jacobian $[J]$ matrix.

17. a) Using two point gaussian quadrature evaluate the following integral

$$\int_{-1}^1 (9x + 2x + x^3) dx$$

b) How do you treat the boundary conditions for the following?

- long cylinder subjected to internal pressure
- elastic sleeve press fitted on elastic shaft

c) Derive material matrix for plane stress and plane strain conditions

FACULTY OF ENGINEERING**B.E. 3/4 (CSE) II – Semester (Old) Examination, December 2017****Subject: Web Programming and Services****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part A and any five questions from Part B.****PART – A (25 Marks)**

- | | | |
|----|--|---|
| 1 | What is the purpose of DTD? | 2 |
| 2 | Write java script code to calculate roots of quadratic equation. | 3 |
| 3 | What is XSLT? | 2 |
| 4 | Define Servlet. | 2 |
| 5 | Mention the purpose of filter. | 2 |
| 6 | Why do we use directives in JSP? | 3 |
| 7 | Write differences between Row Set object and Result Set object. | 3 |
| 8 | What is the purpose of distributed transactions? | 3 |
| 9 | What is the purpose of distributed transactions? | 2 |
| 10 | List out ASP.NET life cycle phases. | 3 |

PART – B (50 Marks)

- | | | |
|-------|---|----|
| 11 a) | Write XHTML program to create form to fill personal details. | 5 |
| b) | Write java script program to validate user name. | 5 |
| 12 a) | What are the primary advantages of XML schema over DTD? | 3 |
| b) | Create XSLT style sheet for one patient element of the XML document of (information about patients must include name, social society number, age, room number, primary insurance company, know medical problems and know drug allergies). Make sample data for at least 4 patients. | 7 |
| 13 a) | What is session? Explain different session handling mechanisms. | 6 |
| b) | Explain different life cycle methods of servlet. | 4 |
| 14 a) | How to secure web applications? | 5 |
| b) | What is JSP? Explain advantages and disadvantages of JSP. | 5 |
| 15 a) | Explain steps involved in JDBC process. | 6 |
| b) | List out Row Set objects and explain. | 4 |
| 16 a) | Explain page level events in ASP.NET. | 7 |
| b) | Give the architecture of CLR. | 3 |
| 17 | Write short notes on: | 10 |
| a) | .NET remoting | |
| b) | JSP directives | |

FACULTY OF ENGINEERING**B.E. 3/4 (CSE) II – Semester (Main) (Suppl.) Examination, December 2017****Subject: Web Programming and Services****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part A and any five questions from Part B.****PART – A (25 Marks)**

- 1 What is meant by website? 2
- 2 What is the purpose of XSLT? 3
- 3 Write JavaScript function to validate age? 3
- 4 Distinguish between Servlet and JSP. 3
- 5 Mention methods support by ServletContext object. 2
- 6 What is the difference between JSP include and JSP forward directive? 3
- 7 Write deployment descriptor for the filter. 2
- 8 Which API is used for connection pooling? 2
- 9 What is meant by code behind files in ASP.Net? 2
- 10 Why CLR? 3

PART – B (5x10 = 50 Marks)

- 11 a) Create a form using XHTML to accept the details of a student: Name of the Hotel, Items (checkboxes), Quantity, Rating (radio button), Feedback (allow multiple lines) and provision to attach any other file or image. 5
- b) Write a HTML program to create a table as per the format below. 5

Name	Subject	Credits	Marks
XYZ	Maths	4	35
UVW		4	66
ABC	Science	5	
Students details mentioned above			

- 12 a) Write a program to demonstrate session tacking with two web pages one accepting personal information of the user and second accepting educational qualifications. After the second form submission it must display the details of personal and educational information. 6
- b) Discuss Servlet collaboration. 4
- 13 a) Draw the life cycle of Filter. Explain in detail steps involved in deploying a web application. 5
- b) Write a program to create iterative custom tag using Tag Extension. 5

- 14 a) Write a JSP program to take details form the user and store them in database using UseBean tag. 6
- b) What is Filter? Write a filter to authenticate the user. 4
- 15 a) Explain different validation controls in ASP.Net with examples. 6
- b) Write a program to store data in database in ASP.Net? 4
- 16 a) Design a XML document for catalogue Books & Write an XML schema definition. 5
- b) Illustrate the life cycle of the JSP. Discuss is the purpose of custom tag libraries. 5
- 17 Write short notes on:
- a) J2EE Architecture 5
- b) CTS 5

FACULTY OF INFORMATICS**B.E. 3/4 (IT) II-Semester (Old) Examination, December 2017****Subject : Artificial Intelligence****Time : 3 hours****Max. Marks : 75****Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.****PART – A (25 Marks)**

- 1 What is Turing Test? 2
- 2 Differentiate between data-driven and goal driven search. 3
- 3 Define semantic tableau. 2
- 4 Show that CVD is a logical consequence of $S = \{AVB, \sim AVD, CV\sim B\}$ using resolution and refutation method. 3
- 5 Define Bayesian belief network. 2
- 6 Differentiate between traditional system and expert systems. 3
- 7 Define the terms entropy and information gain. 3
- 8 Construct the perceptron for OR function. 2
- 9 List the types of phases involved in sentence analysis. 2
- 10 Define Parser. List the types of parser. 3

PART – B (50 Marks)

- 11 a) Given two jugs, a 4-gallon and 3-gallon having no measuring markers on them. There is a pump that can be used to fill the jugs with water. How can you get exactly 2 gallons of water into 4-gallons jug. Use state space approach to solve the problem. 6
- b) Why is A^* is admissible? 4
- 12 a) Show that “It is humid today and if it is humid then it will rain so it will rain today” is a valid argument. Using truth table approach. 4
- b) Explain how knowledge is represented using frames. 6
- 13 a) Explain about monotonic and non-monotonic expert systems. 4
- b) Explain architecture of expert system with help of a neat diagram. 6
- 14 Write and explain the decision tree algorithm in detail and construct the decision tree for the following data. 10

Day	Outlook	Temperature	Humidity	Wind	Play Tennis
D ₁	Sunny	Hot	High	Weak	No
D ₂	Sunny	Hot	High	Strong	No
D ₃	Overcast	Hot	High	Weak	Yes
D ₄	Rain	Mild	High	Weak	Yes
D ₅	Rain	Cool	Normal	Weak	Yes
D ₆	Rain	Cool	Normal	Strong	No
D ₇	Overcast	Cool	Normal	Strong	Yes
D ₈	Sunny	Mild	High	Weak	No
D ₉	Sunny	Cool	Normal	Weak	Yes
D ₁₀	Rain	Mild	Normal	Weak	Yes
D ₁₁	Sunny	Mild	Normal	Strong	Yes
D ₁₂	Overcast	Mild	High	Strong	Yes
D ₁₃	Overcast	Hot	Normal	Weak	Yes
D ₁₄	Rain	Mild	High	Strong	No

- 15 Explain about all the stages of semantic analysis with an example sentence. 10
- 16 a) Explain in detail about constraint satisfaction problem. 5
b) Explain in detail about multilayer feed forward network. 5
- 17 Write short notes on :
- a) Universal networking knowledge 3
 - b) Supervised and unsupervised learning 4
 - c) Extended semantic networks 3

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FACULTY OF INFORMATICS**B.E. 3/4 (IT) II-Semester (New) (Supplementary) Examination, December 2017****Subject : Artificial Intelligence****Time : 3 hours****Max. Marks : 75****Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.****PART – A (25 Marks)**

- | | | |
|----|--|---|
| 1 | Define a state and explain how state of a problem change. | 3 |
| 2 | Define admissibility of A* algorithm. | 2 |
| 3 | Explain about various components of AI system. | 3 |
| 4 | What is propositional logic and predicate logic? | 2 |
| 5 | Give Baye's rule. Explain its use with example. | 2 |
| 6 | Explain about various components of machine learning system. | 3 |
| 7 | List the various phases of sentence analysis. | 2 |
| 8 | Distinguish between Bottom-up parsing and Top-down parsing. | 3 |
| 9 | What is Hierarchical clustering? | 2 |
| 10 | Explain about semantic web. | 3 |

PART – B (50 Marks)

- | | | |
|-------|--|----|
| 11 a) | There are two jugs, a 5-gallon (5-g) and 3-gallon (3-g) with no measuring mark on them. There is endless supply of water through tap. The task is to get 4-gallon water in the 5-gallon jug. Describe the state space and production rules and find the solution path. | 6 |
| b) | Explain briefly about bidirectional search. | 4 |
| 12 a) | List all Heuristic searches and explain any one in detail. | 6 |
| b) | Explain about FOL in predicate logic. | 4 |
| 13 a) | Explain about monotonic and non-monotonic TMS in detail. | 6 |
| b) | Draw the architecture of expert system. | 4 |
| 14 | Write about various knowledge representation approaches and write how knowledge is represented using semantic networks. | 10 |
| 15 | Write a detail note on multi layer feed forward neural networks. | 10 |
| 16 | Describe natural language processing and explain about link parser and chart parser. | 10 |
| 17 | Write a short notes on the following. | |
| a) | Hill Climbing | 3 |
| b) | Design issues of ANN | 3 |
| c) | Knowledge representation using frames | 4 |
