FACULTY OF ENGINEERING
B.E.4/4 (Civil) I Semester (Backlog) Examination, October 2020

Subject: Water Resources Engineering - II

Time: 2 hours   **Max. Marks: 75**

PART – A

Note: Answer any seven questions.   **(7x3 = 21 Marks)**

1 Define bank storage and valley storage.
2 Define trap efficiency.
3 What is dike?
4 Compute the limiting height of a concrete dam when permissible stress (f) is 2400 kN/Sq.m with specific gravity of material is 2.20.
5 Distinguish between zoned and diaphragm type of embankment dams.
6 List the causes of hydraulic failures of earth dam. Explain about sloughing.
7 State the salient features of Ogee spillway.
8 State any two applications of hydraulic jump in irrigation Engineering.
9 Give the classification of hydel plants according to hydraulic characteristics.
10 Define primary power and secondary power.

PART – B

Note: Answer any three questions.   **(3x18 = 54 Marks)**

11 a) Explain about reservoir sediment control.
   b) Describe briefly as to how you would fix the storage capacity of a reservoir and the height of the dam required for this storage.

12 a) With the help of neat sketches and relevant equations write various forces acting on gravity dams.
   b) List out various crest gates used for controlling reservoirs water. With the help of neat figures explain any two types.

13 a) Explain graphical method construction of phreatic line in earthen dam with the help of neat sketch.
   b) Explain the criteria for safe design of an earth dam.

14 a) What is a spillway? Sketch a saddle siphon spillway and explain the functions of its various component parts.
   b) Find the length of the spillway from the following data:
       Height of the spillway crest from the river bed: :125m
       Discharge   :10200cumec
       Permissible level of submergence above F.R.L :12m
       Maximum permissible span(clear)   :15.0m
       Thickness of each pier   :4.5m
       Piers and abutments are round type.

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15 a) The load on a hydel power plant varies from of 50,000 kW to 85,000 kW. Nine
        generators of 10,000 kW each have been installed.
        Calculate i) maximum demand ii) load factor iii) plant factor iv) utilization factor
   b) Distinguish between storage and pond age.

16 Explain in detail with neat figures about   the various types of energy dissipation
   Device used below the spillways in relation to the position of tail water rating curve
   and jump height curve.

17 Write a short note on the following
     a) Low and high gravity dams
     b) Calculation of life of a reservoir.

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FACULTY OF ENGINEERING

B.E. 4/4 (Inst.) I – Semester (Backlog) Examination, October 2020

Subject: Opto – Electronic Instrumentation

Time: 2 hours   Max. Marks: 75

PART – A

Note: Answer any seven questions.   **(7x3 = 21 Marks)**

1. Mention properties of lasers generation.
2. In a two energy level system transition of higher to lower energy levels emit Wave Length of 350 nm. Calculate the ratio of the population of two energy levels at 27^0C wave given $g1 = g2$.
3. List out the laser application in engineering.
4. Compute the NA, Acceptane angle and the critical angle of the fibre core having Refractive index = 1.0 and cladding refractive index = 1.05.
5. Mention different types of fibre fabrication techniques.
6. What is meant by Acousto-optic modulation technique?
7. Write the advantages of fibre optic sensors over electrical sensor.
8. Explain liquid level measurement using fibre optic sensor.
9. Mention the special features of LDRs.
10. Calculate the efficiency of PIN diode if the responsivity is 0.58 A/W at 800nm.

PART – B

Note: Answer any three questions.   **(3x18 = 54 Marks)**

11. Explain with necessary diagrams mechanisms of Carbondioxide Lasers.

12. With necessary diagrams explain the following application of laser.
    (a) Laser Nephelometry   (b) Laser cutting.

13. (a) Explain any one type of laser interferometer.
    (b) Explain in details the losses in Optical Fibre.

14. (a) How fibre optic sensors are classified? What is basic principle of Fibre optic sensor? Explain with suitable diagram?
    (b) How the current and voltage is measured using optical fibre?

15. Explain gas lasers with their respective energy levels with suitable diagram.

16. (a) Explain the safety precaution while using Lasers.
    (b) Write short note on LCD.

17. (a) Explain Holographic Technique of reconstructing a 2-D image.
    (b) Write short notes on Nd-YAG Lasers.

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FACULTY OF ENGINEERING
B. E. 4/4 (ECE) I – Semester (Backlog) Examination, October 2020

Subject: Industrial Administration and Financial Management

Time: 2 hours   Max. Marks: 75

PART – A

Note: Answer any seven questions.   **(7x3 = 21 Marks)**

1. List out the merit and demerits of product layout.

2. State the types of Business Organisation.

3. Define the term 'Performance Rating Factor'.

4. Explain the term 'Work Study'.

5. What is meant by ISO?

6. What is the importance of 'Quality Circles'?

7. State the standard form of Linear Programming and its assumptions.

8. State the objectives of Materials Management.

9. Mention the salient factors to be considered for preparing a Capital Budgeting in any manufacturing industry.

10. What are the elements of costs?

PART – B

Note: Answer any three questions.   **(3x18 = 54 Marks)**

11. (a) What is the importance of Organisation structure? Explain the merits of Line and Staff Organisation structure over line type of organization structure.

    (b) Explain various factors affecting Layout.

12. (a) State the principles of Motion Economy related Human body.

    (b) An operator was kept under observation for 10 days. He was found working on 400 occasions and abstaining including idle 100 times. He produced 200 jobs during these days. The observation per day was for 5 hours only and the total number of observations was 500. Take 120 as performance rating factor for operator and 20% as allowances. Calculate standard time.

13. (a) Explain the operating characteristics curve used in Inspection.

    (b) Explain briefly Statistical Quality Control and its principles.

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14. Four machines namely lathe, milling, grinding and drilling machines are to be repaired by four maintenance operators who can perform all the jobs but differ in their efficiency and the tasks differ in their intrinsic difficulty. The estimates of the times each man would take to perform each is given below in the matrix:

Machine Operator	Lathe	Milling	Grinding	Drilling
Suresh	8	24	17	11
Amith	13	28	4	26
Raju	38	19	18	15
Rohit	19	26	24	10

How the repair tasks should be allocated to the operators to minimize the total man hours.

15. (a) Explain the causes of depreciation and any two methods of depreciation.

   (b) Explain the concept of Break Even Analysis and its importance.

16. (a) Derive the formula for simple EOQ and state its assumptions.

   (b) Explain Halsey plan of wage incentive.

17. Write short notes on

   (a) Symbols and charts used in method study.

   (b) Acceptance Sampling.

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FACULTY OF ENGINEERING
BE 4/4 (Mech.) I-Semester (Backlog) Examination, October 2020

Subject: Finite Element Analysis

Time: 2 hours   Max. Marks: 75

PART – A

Note: Answer any seven questions.   (7x3 = 21 Marks)

1 Sketch truss, beam and frame elements.
2 Distinguish between sub parametric, super parametric and iso-parametric element.
3 What are the types of boundary conditions imposed in heat transfer problem?
4 Distinguish between essential and natural boundary conditions.
5 Derive the relation between global and natural coordinates for a 1-D element.
6 One dimensional linear element has been used to approximate the temperature distribution within a bar. The temperature at the node i (3,0) and node j (6,0) are ϕ_i =180 ºC and ϕ_j = 900C respectively. Determine the shape functions and the temperature at point A (4, 0) from the origin.
7 Determine the coordinates of centroid of triangular element whose nodal coordinates are (1, 1), (3,1.5), (2.5, 5) and obtain its area by evaluating the Jacobian.
8 Derive the material matrix [D] for a 3D element.
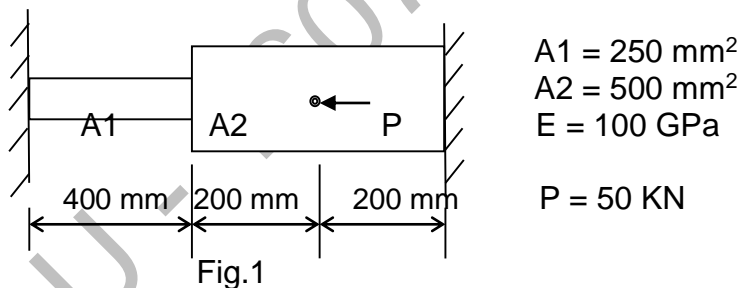9 List the FEA software's used for stress analysis and heat transfer analysis.

PART – B
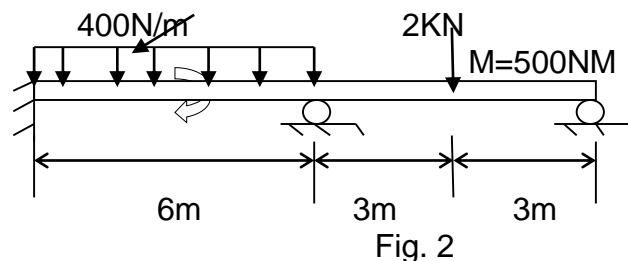
Note: Answer any three questions.   (3x18 = 54 Marks)

10 For the bar shown in figure 1, determine nodal displacements and element stresses.

[10]

A1 = 250 mm²
A2 = 500 mm²
E = 100 GPa

P = 50 KN

Fig.1

11 For the beam shown in figure 2, write (a) the assembled stiffness matrix and force vectors. (b) Boundary conditions.

Fig. 2

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12 Determine the temperature distribution and rate of heat transfer in a straight fin of circular cross section shown in Figure 3. Use two elements and consider the tip of fin to be insulated. Diameter of road =1cm, K =5W/cm ^{0}C.

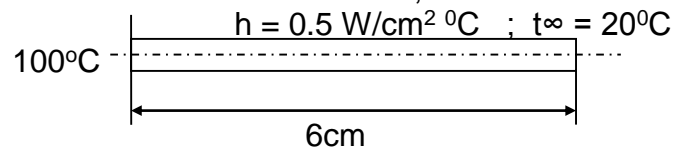$$h = 0.5 \text{ W/cm}^2 \text{ }^0\text{C} \quad ; \quad t_\infty = 20^0\text{C}$$

100ºC

6cm

Fig. 3

13 Derive the element stiffness matrix for an Axi-symmetric element starting from basics.

14 Determine the eigen value and eigen vectors for the stepped bar shown in figure 4. E=200Gpa, ρ = 7650 kg/m^3 .
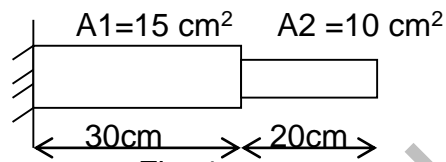
A1=15 cm^2 A2 =10 cm^2

30cm   20cm

Fig. 4

15 Explain the concept of time dependent field problem applied to one dimension heat flow.

16 Derive the material matrix for plain stress and plain strain conditions

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FACULTY OF ENGINEERING

B.E. 4/4 (AE) I – Semester (Backlog) Examination, October 2020

Subject: Vehicle Maintenance

Time: 2 hours   Max. Marks: 75

PART – A

Note: Answer any seven questions.   **(7x3 = 21 Marks)**

1. What is the main objective of maintenance?
2. Write short notes on any two types of maintenance.
3. List out the special tools to be used in the maintenance of an engine.
4. What are the preliminary actions to be taken before taking out the engine from a vehicle?
5. What is meant by clutch pedal free play? What are the effects of incorrect adjustment of it?
6. What do you mean by front end geometry and how they can be measured?
7. What is the effect of fan belt tension on alternator performance?
8. List out the various modern electronic control units which require regular maintenance.
9. List out the parts of a car that requires greasing during general maintenance schedule.
10. When and why the fuel injection pump is to be calibrated?

PART – B

Note: Answer any three questions.   **(3x18 = 54 Marks)**

11. (a) Explain in detail various forms and records used in the maintenance of vehicles.

    (b) Illustrate the check list for the maintenance of a car.

12. (a) What is the procedure for testing connecting rod for bend and twist?

    (b) How valve clearance is adjusted in a four cylinder engine?

13. Describe the major problems that will affect the performance of plate type clutch system of a vehicle. How they can be rectified?

14. (a) Give a detailed procedure for brake adjustment.

    (b) Explain the procedure for brake bleeding operation. Why it is done?

15. Give a procedure for periodical maintenance for lead acid battery. How will you find the battery is charged or not?

16. (a) Give a brief account of servicing of oil and fuel filter.

    (b) State some of the special tools and equipments necessary for a garage.

17. (a) Explain tuning of carburetor for optimum fuel supply.

    (b) Write a detailed note on anticorrosion and antifreezing solutions.

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FACULTY OF ENGINEERING

B. E. (CSE/IT) 4/4 – I - Semester (Backlog) Examination, October 2020

Subject: Information Security

Time: 2 hours   Max. Marks: 75

PART – A

Note: Answer any seven questions.   **(7x3 = 21 Marks)**

1. What are the three main goals of Information Security?

2. Differentiate between a threat and an Attack?

3. What is Data confidentiality?

4. What is Race condition?

5. What are the different Cipher Methods?

6. What is Benchmarking?

7. Explain codes of ethics?

8. Draw the 3-D NSTISSC Model of Security.

9. Write about digital forensics.

10. How does a packet filtering firewall work?

PART – B

Note: Answer any three questions.   **(3x18 = 54 Marks)**

11. (a) Explain Security System Development Life-cycle with diagram.

    (b) Discuss the components of Information Security.

12. (a) Explain Law and Ethics of Information Security.

    (b) What are the different attacks to Information System?

13. Explain Firewall Architecture in detail.

14. (a) What is VPN? Briefly discuss two approaches using which a VPN can be implemented.

    (b) What is Honey pot? Explain its role.

15. What is IDPS? Explain different types of IPS in detail.

16. (a) What are the technical aspects of Information System? Implementation in detail.

    (b) Explain in detail Security Management Maintenance Model.

17. Write a short note on:
    (a) Digital Signature.

    (b) Cost Benefit Analysis (CBA).

    (c) Public Key Information (PKI).

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FACULTY OF ENGINEERING

B. E. (Civil) VII – Semester (CBCS) (Supplementary) Examination, October 2020

Subject: Prestressed Concrete

Time: 2 hours   Max. Marks: 70

PART – A

Note: Answer any five questions.   **(5x2 = 10 Marks)**

1. Differentiate between full and partial prestressing.
2. Define the kern zone of a section.
3. State the equation for calculating the moment of resistance of rectangular prestressed sections.
4. Differentiate between shear compression failure and shear tension failure.
5. State the equation for calculating the bursting tensile force as per IS codal provisions.
6. Mention advantages and disadvantages of post-tensioning.
7. Name the three approaches to analyse a prestressed member at transfer and under service loads.
8. Define Primary moment, Secondary moment and Resultant moment.
9. Enumerate the steps for designing stirrups along the length of a beam.
10. Derive the equation for deflection of a simply supported beam having parabolic tendon with eccentricity 'e' at the center and zero at the support.

PART – B

Note: Answer any four questions.   **(4x15 = 60 Marks)**

11. What is loss of prestress? Explain different types of losses in prestressed concrete members.

12. For a post-tensioned beam 300 mm wide and 600 mm deep, the profile of the CGS is parabolic with no eccentricity at the ends. The live load moment due to service loads at mid-span is 550 kNm. The prestress after transfer is 1200 kN. Assume 12% loss at service. Assuming M30 concrete, evaluate the following:
    a) Kern levels
    b) Cracking moment
    c) Stresses at the top and bottom fibers at transfer and service.

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13. A post tensioned bridge of I section with bonded tendons with flanges dimensions 800 mm x 100 mm and web dimensions 100 mm x 800 mm. High tensile steel having an area of 3000 mm^2 is located at an effective depth of 800 mm. The effective prestress in steel after all losses is 1000 N/mm^2 and the effective span of the girder is 18 m. If f_{ck} = 40 N/mm^2 and f_p = 1600 N/mm^2, estimate the ultimate flexural strength of the section.

14. A pretensioned beam of uniform rectangular cross section 150 mm wide and 500 mm deep is prestressed with an effective force of 350 kN at constant eccentricity of 200 mm. Design the shear reinforcement at a section uncracked in flexure to resist an ultimate shear force of 150 kN using IS 1343. The grade of concrete is M40. Use 8 mm stirrups with yield stress of 415 MPa.

15. A prestressed concrete girder spanning over 12 m, rectangular in cross-section, 200 mm wide and 500 mm deep is prestressed by a parabolic cable having an eccentricity of 100 mm below the centroidal axis at centre of span and an eccentricity of 30 mm above the centroidal axis at the support section. The initial force in the cable is 400 kN. The beam supports a uniformly distributed load of 4 kN/m over the entire span. Given E_c = 36 GPa.
    a) Neglecting the loss prestress, estimate the short term deflection due to prestress and self-weight and
    b) Allowing 15% loss of prestress, estimate the long term deflection under prestress, self-weight and live load. Take creep coefficient as 1.6.

16. Compute the position and magnitude of maximum tensile stress and bursting tension using Guyon's Method, for the end block, rectangular in section with dimensions 150 mm wide and 300 mm deep. The concentric anchor force of 150 kN is transmitted by a distribution plate of size 150 mm width and 80 mm depth. If the yield stress in steel is 260 N/mm^2, also design the reinforcement for the end block.

17. A two span continuous beam ABC, with each span of 12 m, is of rectangular section, 200 mm wide and 550 mm deep. The beam is prestressed by a parabolic cable, concentric at the end supports and having an eccentricity of 120 mm towards the soffit of the beam at centre of span and 180 mm towards the top of beam at the mid support B. The effective prestressing force in the cable is 660 kN. Show that the cable is concordant and locate the pressure line the beam when, in addition to its self-weight, the beam supports an imposed load of 6 kN/m.

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FACULTY OF ENGINEERING
B.E (ECE) VII-Semester (CBCS) (Suppl.) Examination, October 2020

Subject : Industrial Administration and Financial Management

Time: 2 hours   **Max. Marks: 70**

PART – A

Note: Answer any five questions.   **(5x2 = 10 Marks)**
1. What is concept of organization structure
2. What are characteristics of organization
3. What is standard time definition of work
4. What is Performance rating of the worker
5. What is inspection in manufacturing industry
6. What is dispatching function in PPC
7. State material inventory classification
8. What are function of material Management
9. State the elements of cost in engineering
10. What is the concept of BEA?

PART – B

Note: Answer any four questions.   **(4x15 = 60 Marks)**

11. a) Explain the with sketch the Process Plant layout design
    b) Explain the principles of plant layout

12. a) Explain the Performance Rating of worker by speed rating.
    b) Explain the work sampling procedure?

13. a) Explain in Process Control by (i) variables types, (ii) attribute types
    b) State the definition of Process Planning in Manufacturing Industry

14. a) Solve the LP problem graphically
    Maximize Z-20x1+3x2
    Subject to 5x1+x2=4; 6x1-3x2=8 where x1, x2>=0

    b)

	Mow	Paint	Wash
A	Rs. 16	Rs.15	Rs.12
B	Rs.9	Rs.18	Rs.11
C	Rs.19	Rs.8	Rs.19

    Solve the LP Assignment method problem of work.

15. a) Explain the depreciation straight line method with an example
    b) Explain Production and manufacturing overhead

16. a) Explain the string diagram method in work flow process in method study
    b) Explain the following scheduling charts in PPC (i) perpetual schedule (ii) order schedule,   (iii) loading schedule

17. a) Explain the duties of Purchase manager
    b) Explain the nature of cost (i) fixed,   (ii) variable (iii) semi variable, (iv) controllable (v) uncontrollable cost.

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FACULTY OF ENGINEERING

B. E. (M/P) (CBCS) VII – Semester (Suppl.) Examination, October 2020
Subject: Production & Operations Management

Time: 2 hours   Max. Marks: 70

PART – A

Note: Answer any five questions.   **(5x2 = 10 Marks)**

1. Distinguish between Job shop, batch shop and continuous production.

2. What is Break even analysis?

3. Define method study.

4. Define Mean Absolute Deviation.

5. What is a therblig?

6. What is the difference between dependent demand and independent demand?

7. What is MRPII? How it differ from MRPI?

8. What is the difference between event and activity?

9. Outline the advantages of aggregate planning.

10. Briefly explain Fulkerson's rule.

PART – B

Note: Answer any four questions.   **(4x15 = 60 Marks)**

11. (a) Discuss the various principles of Plant Layout.

    (b) Compare and contrast the product layout and process layout.

12. (a) Briefly discuss about
    (i) Recording techniques   (ii) Work measurement.

    (b) An operator was kept under observation for 10 days. He was found working on 400 occasions and abstaining including idle 100 times. He produced 200 jobs during these days. The observation per day was for 5 hours only and the total number of observations was 500. Take 120 as performance rating factor for operator and 20% as allowances. Calculate standard time.

13. A firm uses simple exponential smoothing with $\alpha = .1$ to forecast demand. The forecast for the week of February was 500 units whereas actual demand turned out to be 450 units.
    (a) Forecast the demand for the week of February 8.

    (b) Assume that actual demand during the week of February 8 turned out to be 505 units Forecast the demand for the week of February 15. Continue on forecasting through March 15, assuming that subsequent demands were actually 516, 488, 467, 554 and 510 units.

14. (a) Explain Work sampling. Discuss the advantages of work sampling over time study.

    (b) What are the various costs involved in aggregate planning?

15. (a) Differentiate between MRPI and MRPII.

(b) What are the features of ERP packages?

16. A project has the following times schedule:

Activity	1-2	1-3	2-4	3-4	3-5	4-9	5-6	5-7	6-8	7-8	8-9	8-10	9-10
Time in Weeks	4	1	1	1	6	5	4	8	1	2	1	8	7

Construct the network and compute
(i) Critical path and its duration.
(ii) Float for each activity.

17. Write short notes on the following:
(i) Delphi technique (ii) Time study equipment (iii) Fixed position layout.

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FACULTY OF ENGINEERING

B. E. (A.E) (CBCS) VII – Semester (Suppl.) Examination, October 2020

Subject: Vehicle Body Engineering

Time: 2 hours   Max. Marks: 70

PART – A

Note: Answer any five questions.   **(5x2 = 10 Marks)**

1. Draw the layout of four door saloon and also specify its salient features.
2. What are the possible Entrance and Exit Location for bus bodies?
3. What is drag? List out various forms of drag.
4. What are the effect of side force and wind thrust?
5. List out the body trim items.
6. List out the types of metal sections used in body construction.
7. What are the advantages of an air bag?
8. Define active safety and passive safety.
9. Draw the flow chart for painting process.
10. List out the methods of noise suppression.

PART – B

Note: Answer any four questions.   **(4x15 = 60 Marks)**

11. Explain with neat sketch different types of bus body styles.
12. (a) List out the types of wind tunnels and explain any one briefly.
    (b) What are the various Aerodynamic forces and moments acting on the vehicle?
13. (a) List out the requirements for vehicle body design.
    (b) Explain different calculation of loading cases.
14. (a) Write note on visibility and methods of improving visibility.
    (b) What are the points to be considered while designing a driver's seat?
15. Describe the painting process to be carried out in vehicle body construction.
16. (a) Explain the methods of improving space in cars.
    (b) Write short notes on pressure distribution on the vehicle surface.
17. Write short note on the following:
    (a) Body shell analysis.
    (b) Dashboard instruments.
    (c) Noise characteristics.

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FACULTY OF ENGINEERING

B. E. (CSE) (CBCS) VII – Semester (Suppl.) Examination, October 2020
Subject: Data Mining

Time: 2 hours   **Max. Marks: 70**

PART – A

Note: Answer any five questions.   **(5x2 = 10 Marks)**

1. What is data mining?

2. Compute cosine similarity between two term frequency vectors given below.
   X = (5,0,3,0,2,0,0,2,0,0)   Y = (4,0,2,0,1,1,0,1,0,2)

3. Define support and confidence.

4. Given that the probability of purchasing a computer game is P({game}) = 0.60, the probability of purchasing a video is P({video}) = 0.75, and the probability of purchasing both is P({game, video}) = 0.40. Measure the lift of the rule buys (X, "computer game") ⇒ buys (X, "video").

5. Define Support Vectors.

6. Define multilayer feed forward neural network.

7. Briefly outline the clustering quality measure BCuded precision.

8. How K-means algorithms differ form K-medoids?

9. Write a short note on three different categories of sequence data for mining.

10. What is meant by web mining?

PART – B

Note: Answer any four questions.   **(4x15 = 60 Marks)**

11. (a) Explain about data mining functionalities with examples.

    (b) What are the major issues in data mining? Explain in detail.

12. Explain Apriori algorithm to find all frequent item sets and strong association rules for the following database, where min-sup = 42% and min-conf = 60%.

TID	Items bought
T100	{Onion, Potato, Burger}
T200	{Potato, Burger, Milk}
T300	{Milk, Bread}
T400	{Onion, Potato, Milk}
T500	{Onion, Potato, Burger, Bread}
T600	{Onion, Potato, Burger, Milk, Bread}
T700	{Potato, Burger, Milk}

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13. Write the algorithm for decision tree induction and explain the construction with example dataset given below.

Outlook	Temperature	Humidity	Wind	Play Golf
Rainy	Hot	High	False	No
Rainy	Hot	High	True	No
Overcast	Hot	High	False	Yes
Sunny	Mild	High	False	Yes
Sunny	Cool	Normal	False	Yes
Sunny	Cool	Normal	True	No
Overcast	Cool	Normal	True	Yes
Rainy	Mild	High	False	No
Rainy	Cool	Normal	False	Yes
Sunny	Mild	Normal	False	Yes
Rainy	Mild	Normal	True	Yes
Overcast	Hot	Normal	False	Yes
Overcast	Mild	High	True	Yes

14. (a) Apply K-means algorithm to cluster the following points by taking K = 3, and initial cluster centers are A_1, B_1, C_1.
$A_1(2,8)$, $A_2(2,5)$, $A_3(7,4)$, $B_1(4,7)$, $B_2(7,5)$, $B_3(6,5)$, $C_1(2,3)$, $C_2(4,9)$, $C_3(5,8)$

   (b) Briefly describe the categorization of clustering methods.

15. (a) Explain about Visual and Audio data Mining.

   (b) Describe the various data Mining applications.

16. (a) Explain different Pattern evaluation methods.

   (b) Explain BIRCH algorithm for clustering.

17. Write short notes on any two of the following:

   (a) Evaluation of clustering.

   (b) Bayesian Belief Networks.

   (c) Data similarity and dissimilarity.

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FACULTY OF ENGINEERING

B. E. (CBCS) (IT) VII – Semester (Suppl.) Examination, October 2020

Subject: Network Security & Cryptography

Time: 2 hours   **Max. Marks: 70**

PART – A

Note: Answer any five questions.   **(5x2 = 10 Marks)**

1. Define the terms – Confidentiality, Integrity and Availability.
2. Define Steganography.
3. What are stream Ciphers & block ciphers?
4. Differentiate between symmetric key and asymmetric key cryptosystem.
5. Define Cryptographic Hash function & Cryptographic MAC function.
6. Define HMAC and CMAC.
7. What are the threats in web security?
8. Brief out about secure shell. (SSH).
9. What do you mean by Enveloped data in S/MIME?
10. What are transport mode ESP and Tunnel mode ESP?

PART – B

Note: Answer any four questions.   **(4x15 = 60 Marks)**

11. (a) Explain the model of Network security.

    (b) Explain Caesar Cipher and Monoalphabetic Ciphers with example.

12. (a) Explain DES algorithm.

    (b) Explain Diffie Hellamna Key Exchange.

13. (a) Explain single round processing of SHA-5/2.

    (b) With diagram explain Kerberos realm.

14. (a) Explain SSL record protocol.

    (b) Draw & explain in brief the IEEE 802.lli phases of operation.

15. (a) Explain with diagram the transition and reception of PGP messages.

    (b) With dig. Explain ESP packet format.

16. (a) Explain in brief the Blowfish algorithm.

    (b) What are digital signatures? Explain Digital Signature standard (DSS).

17. Write short notes on:
    (a) Public Key distribution.
    (b) Rail-fence-transposition Technique.
    (c) Types of security attacks.

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