FACULTY OF ENGINEERING
BE 3/4 (CE) I-Semester (Backlog) Examination, July 2021

Subject: Transportation Engineering

Time: 2 Hours   Max .Marks: 75

Note: Missing data, if any, may be suitably assumed

PART – A

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

1   List out the recommendations of Jayakar committee?
2   What are the different traffic studies?
3   What are the characteristics of an aircraft?
4   List out the factors to be consider for design of pavement.
5   Why the corrections are needed for basic runway length?
6   Explain the concept of off tracking?
7   Enumerate AADT?
8   Define the term camber and draw different types of cambers with neat sketch
9   What are the component parts of a permanent way?
10 Write a short note on negative super elevation?

PART – B

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

11 (a) Explain the various factors to be consider for controlling of highway alignment?

    (b) The speed of overtaking and overtaken vehicles are 70kmph and 40kmph respectively on a two way traffic road, the average acceleration during overtaking is 0.99m/sec^2. Calculate overtaking sight distance, minimum and desirable length of overtaking zone, draw a neat sketch of the overtaking zone and show the sign posts.

12 (a) Explain the origin and destination study. What are the various uses of origin and destination studies?

    (b) The following data obtained from the spot speed studies. Calculate the speed limit for regulation and speed to check geometric design elements.

Mid speed	15	25	35	45	55	65	75	85	95
Number of Vehicles	0	6	16	34	28	17	6	3	2

13 (a) What are the difference between flexible and rigid pavement?

    (b) Explain the terms. i) ESWL ii) Contact Pressure

14 (a) Draw the neat sketch of the layout of left and right hand turnouts with all the details.

    (b) What are different types of rails? Explain functions and requirement of rails?

15 (a) What are the factors to be consider for selection of an airport?

    (b) Explain wind rose diagram with neat sketch?

                                                                              ..2..

16   Write a short note on the following:
    (a) 30th highest hourly volume.
    (b) Functions of subgrade and surface course in pavement.

17 (a) Explain highway capacity & level of service concept as per HCM 2000.
    (b) Write a note on rotary intersection and the neat sketch of rotary intersection?

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FACULTY OF ENGINEERING
BE 3/4 (EE/Inst.) I – Semester (Backlog) Examination, July 2021

Subject: Linear Integrated Circuits

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

Note: Missing data, if any, may be suitably assumed.

PART – A

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

1   Define slew rate. What causes the slew rate?
2   List the non-ideal characteristics of an Op-Amp.
3   Draw the circuit of a lossy integrator.
4   State the two conditions of oscillations.
5   Draw the functional diagram of a 555 timer.
6   Define capture in range, lock in range and pull in time in PLL.
7   What is the function of a voltage regulator?
8   What are the limitations of three terminal regulators?
9   Define a state variable filter.
10 What are the important parameters of a band pass filter?

PART – B

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

11 (a) Explain the frequency compensating techniques of an Op-Amp.
   (b) Design an Op-Amp differentiator that will differentiate an input signal wit
        f_{max}=100Hz.

12 (a) Explain the operation of zero crossing detector.
   (b) What is an instrumentation amplifier? Draw a system whose gain is controlled by
        an adjustable resistance.

13 (a) Draw and explain the operation of Wien bridge oscillator. Derive the equation for
        frequency of oscillations.
   (b) Explain the working of a voltage controlled oscillator.

14 (a) Explain the current limiting feature of 723 regulators.
   (b) Draw and explain the operation of a series voltage regulator using Op-Amp.

15 (a) Design second order Butterworth LPF having an upper cut-off frequency 2kHz.
   (b) Draw neat circuit of first order low pass filter and describe it in detail.

16 (a) Explain the operation of positive clipper and positive clamper by drawing necessary
        waveforms.
   (b) Explain the Quadrature oscillator in detail.

17 Write short notes on
   (a) Universal filter.
   (b) Flash type A/D converter.

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FACULTY OF ENGINEERING

B.E. 3/4 I – Semester (ECE) (Backlog) Examination, July 2021

Subject: Automatic Control Systems

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

Note: Missing data, if any may be suitably assumed

PART – A

**Note: Answer any Seven Questions**   **(7x3= 21Marks)**

1. What are the advantages of a sampled data control system?

2. What are the necessary and sufficient conditions to be satisfied for the stability of the lamp led data control system?

3. What is principle of argument?
4. Name the time domain specification

5. List out the main differences between open loop and closed loop control system

6. A second order system has a damping ratio of 0.6 and natural frequency of oscillation is 10 real/sec. Determine the damped frequency of oscillation.

7. Define controllability and observability
8. What are the basic components of an automatic control system

9. Draw the block diagram representation of state model

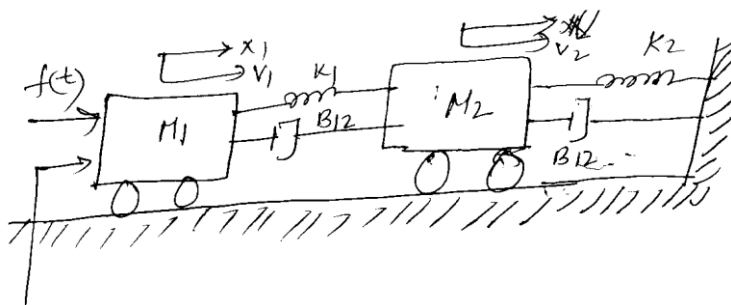10. Mention the properties of state transition matrix?

PART – B

Note: Answer any Three Questions   **(3x18= 54Marks)**

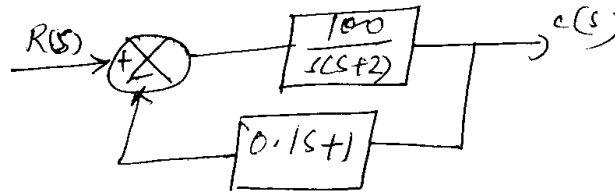11. Find closed loop transfer function of the system whose block diagram is shown below
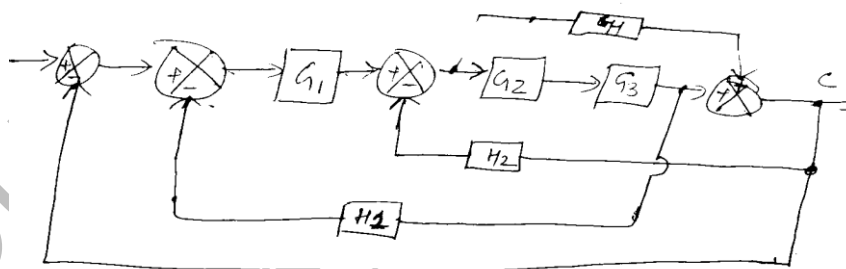
12. Draw the force – voltage electrical analogous circuit and verify by writing mesh equation

13. A unity feedback control system has an open loop transfer function of $G(s) \dfrac{K}{s(s^2 + 4s + 1)}$ sketch the root locus

14. a) A positional control system with velocity feedback is shown in figure below. What is the response of the system for unit.

b) Calculate the fine domain specifications

15. Sketch the bode plot for the following transfer function and determine phase margin and gain margin

$$G(s) \dfrac{Ks^2}{(1 + 0.25)(1 + 0.025)}$$

16. For the sampled data control system shown in the figure, fine the response to unit step input, where G(s) = 1/(s+1)

17. Write short notes on:
    a) Synchros
    b) Sampled data control system
    c) PID Controllers

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FACULTY OF ENGINEERING
B.E. 3/4 (Mech.) I-Semester (Backlog) Examination, July 2021

Subject : Manufacturing Processes

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

Note: Missing data, if any, may be suitably assumed.

PART – A

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

1   Differentiate between "Macod Sand "& "Core Sand".
2   Discuss about the color code for patterns.
3   How welding is different from soldering & Brazing?
4   Sketch the "Gas Cutting nozzle", how it is different from "welding nozzle".
5   How Heat is generated in Resistance welding?
6   Name some unconventional forming techniques. Give the advantages of these techniques.
7   Name different types of Roller arrangements along with their applications.
8   What is a 'Press'? Name different types of Presses?
9   State the Principle of Ultrasonic welding.
10 How riser size is estimated?

PART – B

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

11 a)   What is a core. How it is prepared. What 'core prints'. When chaplets are used.
    b)   Sketch a 'Gating System' labeling all parts. Explain the function of each part.

12 a)   Tabulate various casting defects along with causes & Remedies for each defect.
    b)   Sketch 'Blow Moulding' technique. Explain the process. Give its applications.

13 a)   Differentiate 'EBW' & 'PAW'. Draw sketch for each & Give their applications.
    b)   Give the detail classification of welding processes. Give one application for each type of welding process.

14 a)   Differentiate 'Spot resistance welding' & 'Seam Resistance Welding'. Give sketches for both state their applications.
    b)   With neat sketch explain 'Explosive Welding'. Process & give its applications.

15 a)   How clearance is provided for Die Sets used for Blanking Operation & Pancting Operation respectively. Show with sketches & state the reason.
    b)   State 'Von Miser Yield Criteria'. How this criteria is used in analyzing plastic deformation of metals.

16 Write short notes on
    a)   Inspection & testing of castings
    b)   Welding deforts
    c)   Explosive forming

17 Write short notes on
    a)   Types of Patterns
    b)   Thermo forming
    c)   Differentiate hot & cold working

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FACULTY OF ENGINEERING

B.E. III/IV – I Semester (Prod) (Backlog) Examination, July 2021

Subject: Metal Forming Technology

Time: 2 Hours   Max.Marks: 75

Note: Missing data, if any, may be suitably assumed

PART – A

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

1 What is work hardening and how it is affected by the grain size?
2 Explain crysto plasticity and thermo plasticity.
3 Differentiate blanking and punching operations.
4 What is a stripper plate and how to calculate stripping force?
5 Explain lubrication in wire drawing.
6 List out defects in drawing.
7 Sketch different types of dies used in open forging?
8 Determine the maximum possible reduction for cold rolling a 20mm thick slab when

   μ=0.08 and roll diameter is 1000mm.
9 What is roll separating force?
10 Name different types of furnaces used in forging.

PART – B

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

11 a) Discuss Tresca's criteria and Von-Misses yield criteria.
   b) What are the specific merits of cold working over hot working?

12 a) Name different types of dies used in sheet metal working and explain any two types of dies with newt sketch.
   b) How cutting force can be reduced in sheet metal operation?

13 a) How lubrication is done in hot extrusion?
   b) Distinguish between direct and indirect extrusion.

14 a) Compare simple die with compound die in a sheet metal working process.
   b) With aid of neat sketches explain different types of bending operations.

15 a) Distinguish between drop forging and upset forging.
   b) Discuss any two types of hammers used in forging with neat sketches.

16   Explain with neat sketches.
      a) Powder rolling and roll bending
      b) Different types of rolling mills

17   Write short notes on:
      a) Hydrostatic extrusion
      b) Progressive die
      c) Spinning

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FACULTY OF ENGINEERING
B.E. 3/4 (AE) I-Semester (Backlog) Examination, July 2021

Subject : Production Technology

Time: 2 hours   Max. Marks: 75

Note: Missing data, if any, may be suitably assumed.

PART – A

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

1 Distinguish between a runner and sprue.
2 Enlist any four defects in casting. Sketch them.
3 Illustrate by sketch various types of flames. Marks its salient features and temperatures.
4 Distinguish between brazing and soldering.
5 Show by diagram a planetary roll mill and name its salient parts.
6 Distinguish between true strain and engineering strain.
7 Enlist the characteristics of cutting tool material. Enlist any four of them.
8 Recall and write the main factors that influence the tool life
9 Distinguish between Shaper and slotter.
10 Illustrate by sketch the tool nomenclature of a milling cutter.

PART – B

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

11 Recall and reproduce Allowance. Enlist various types of pattern allowances. Explain them in detail with necessary sketches and equations.

12 (a) Distinguish between Gas Tungsten Arc Welding (GTAW) and Gas Metal Arc Welding (GMAW).
   (b) Elaborate the Ultrasonic welding process principle, working methodology with sketches. Enlist its unique applications, advantages and limitations.

13 (a) Recall forging principle. Explain with neat sketches the grain flow in forging and enlist its advantages.
   (b) Distinguish between blow moulding and injection moulding with respect to process principle, product shapes, and applications with sketches, if necessary.

14 In orthogonal turning of a 100 mm diameter MS bar on a lathe the following data were obtained. Rake angle 10^0, cutting speed 120 mm/min, feed 0.3 mm/rev, chip thickness 0.4 mm, cutting force 180 kg, feed force 60 kg. Determine the (i) Chip thickness ratio (ii) shear plane angle (ii) coefficient of friction (iii) friction angle (iv) chip flow velocity.

15 Enlist various types of taper turning methods in lathe. Explain them in detail with neat sketches. Recall the advantages, limitations and applications of each one of them.

16 (a) Explain hydrostatic extrusion with neat sketches. Enlist particular applications, advantages and limitations.
   (b) Distinguish between hot working and cold working.

17 (a) Distinguish between a capstan lathe and turret lathe.
   (b) Enlist types of chips and chip breakers. Explain them with neat sketches.

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FACULTY OF ENGINEERING
B.E. 3/4 (CSE) I-Semester (Backlog) Examination, July 2021

Subject: Data Communication

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

Note: Missing data, if any, may be suitably assumed.

PART – A

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

1 Differentiate between point to point and multipoint connection.
2 Describe Attenuation.
3 Mention error detection techniques performed in the data link layer.
4 Define Line Coding.
5 Distinguish between FDM and TDM.
6 What is the advantage of sliding window flow control compared to stop and wait flow control?
7 Compare the data rates for traditional Ethernet, Fast Ethernet and Gigabit Ethernet.
8 What functions are performed by Bridge?
9 What are the variants of Wi-Fi standard?
10 What is the principle of frequency reuse in the context of cellular network? Explain.

PART – B

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

11 (a) Explain various Modulation techniques.
    (b) Describe the different Transmission Impairments.

12 (a) Explain in detail Cyclic Redundancy Check (CRC) error detection technique.
    (b) For the bit stream 11001010 sketch the wave form of any three Digital Encoding formats.

13 (a) Differentiate between synchronous time division and statistical time division multiplexing.
    (b) Explain the functions of different layers present in ATM architecture.

14 (a) How are bridges different from routers?
    (b) Draw and explain in detail Ethernet MAC frame format. Give the significance of each field.

15 (a) Explain Bluetooth Architecture.
    (b) Describe handoff in Cellular networks.

16 (a) Explain various Multiplexing techniques.
    (b) Explain HDLC frame structure.

17 (a) Write notes on Pulse Code Modulation.
    (b) Explain in detail Cyclic Redundancy Check (CRC) error detection technique.

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FACULTY OF ENGINEERING
B.E. 3/4 (I.T) I-Semester (Old) Examination, July 2021

Subject : Theory of Automata

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

Note: Missing data, if any, may be suitably assumed.

PART – A

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

1. Construct a DFA to accept the substring 'aba' for $\Sigma = \{a,b\}$.
2. What are the applications of Regular Expressions?
3. What is an Ambiguous Grammar? How ambiguity can be removed?
4. List various closure properties of Regular Languages.
5. What is DPDA? Give its formal Defination.
6. Eliminate left Recursive from the following Grammar

$$E \rightarrow E + T/T$$
$$T \rightarrow T * F/F$$
$$F \rightarrow (E)/id$$

7. State and Explain Pumping Lemma for CFL.
8. Describe about the Extension of the Turing Machine?
9. Give the Formal Notation of Turing Machine.
10. What is a Satisfiability Problem?

PART – B

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

11. Convert the NFA to DFA.

	Q	
$\rightarrow q_0$	$\{q_1\}$	$\{q_2\}$
q_1	$\{q_1\}$	$\{q_1,q_3\}$
q_2	ϕ	ϕ
q_3	q_0,q_3	q_3

12. Define context-free Grammar and Chomsky Normal form. Find a grammar equivalent to $S \rightarrow AB/AC$, $A \rightarrow aA/bAa/a$, $B \rightarrow bbA/aB/AB$, $C \rightarrow aCa/aD$, $D \rightarrow aD/bc$ with no useless symbols.

13. Construct a PDA to accept the languages of Palindromes.

14. Design a TM for $L = \{a^n C b^n / a,b = [0,1]\}$.

15. State and Explain Chomsky Hierarchy in Detail.

16. Find the solution for the given PCP.

i	List A W_i	List B X_i
1	110	110110
2	0011	00
3	0110	110

17. a) What are the applications of Finite Automata?
    b) What is CFG? Give its Formal notation?

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FACULTY OF ENGINEERING
B.E. 3/4 (IT) I-Semester (Backlog) Examination, July 2021

Subject: Theory of Computation

Time: 2 hours   Max. Marks: 75

Note: Missing data, if any, may be suitably assumed.

PART – A

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

1   Write the DFA whose language is {101,011}.

2   Write the following Laws of Regular Languages:

   i) Commutativity   ii) Associativity

3   Write the closure Properties of Regular Languages.

4   Explain Ambiguous Grammars.

5   What is the Yield and Length of Longest Path of the Parse Tree of CNF Grammar?

6   For a PDA, interpret the following:

   $(q_1, 11, YYYZ) \vdash^{1, Y/\epsilon} (q_1, 1, YYZ)$

7   How are Turing Machines related to Decidability?

8   Give a formal definition of a Turing Machine.

9   Distinguish between Recursive Language and Recursively Enumerable Language.

10 Give one example for NP-Complete Problem.

PART – B

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

11 Present a DFA and its Language for the case of Towers-of-Hanoi with   two disks.

12 Convert the given DFA to Regular Expression using induction and
$R_{ij}^k = R_{ij}^{k-1} + R_{ik}^{k-1} (R_{kk}^{k-1})^* R_{kj}^{k-1}$
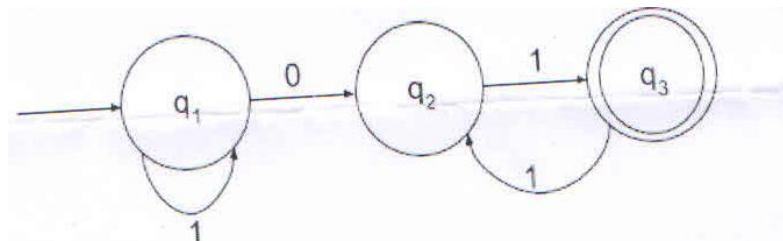
13 a)   For a PDA, explain the following statements:
     (i) $L(P) = \{w \mid q_0, w, Z_0\} \vdash_P (q, \epsilon, \alpha)\}$
     (ii) $N(P) = \{ w \mid q_0, w, Z_0\} \vdash_P (q, \epsilon, \epsilon)\}$
     (iii) $(q, aw, X\beta) \vdash (p, w, \alpha\beta)$
  b)   Write closure properties of CFGs.

14 a) Explain 'Halting of a TM'.
   b) Describe the move of a TM shown below:
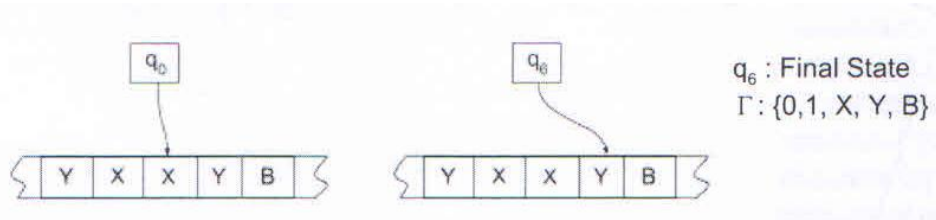
15 Illustrate Post's Correspondence Problem.

16 a) Compare DFA and NFA
   b) Relate DPDA and CFG
   c) Relate Halting and Decidability

17 Write notes on
   a) Automata and Language
   b) Intractable Problems

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FACULTY OF ENGINEERING
BE V - Semester (CE) (AICTE) (Main) Examination, July 2021

Subject: Hydrology & Water Resources Engineering

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

Note: Missing data, if any, may be suitably assumed

PART – A

Answer any five questions.   **(5x2=10 Marks)**
1. Explain hydrologic cycle.
2. What is runoff volume?
3. List and explain types of Aquifers?
4. What is hydroscopic water?
5. Define proportionality.
6. List out the types of gauges used to measure rainfall.
7. Define base flow separation.
8. What is radius of influence?
9. Mention the crop seasons in India with their period.
10. Elaborate the concept of Lacey's theory.

PART – B

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

11. Define evapotranspiration. Explain the methods used to estimate the evapotranspiration.

12. Describe briefly the SCS-CN method of estimation of yield of a catchment through use of daily rainfall record.

13. Describe the recovery test to estimate the transmissibility of a given confined aquifer.

14. Discuss various method of assessment of irrigation water. Explain consumptive use.

15. What do you understand by the following (a) regime canal, (b) canal alignment (c) canal lining, (d) inundation canal and (e) command area?

16. What is infiltration? Briefly explain infiltration indices.

17. Explain flood frequency studies by Gumbles method.

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FACULTY OF ENGINEERING

B.E. V – Semester (AICTE) (EEE/EIE) (Main) Examination, July 2021

Subject: Signals & Systems

Time: 2 Hours   Max.Marks: 70

Note: Missing data, if any, may be suitably assumed

PART – A

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

1   Define (a) Sampling (b) Reconstruction.
2   Determine the fundamental period of $x(t)=\cos(0.5\pi t)$
3   using suitable example define additively and homogeneity.
4   Define a) Causality b) Stability.
5   Define Laplace transform and Fourier transform.
6   State and prove the properties of convolution.
7   Define final value & initial value theorem in Laplace transform.
8   Determine the Laplace transform of $\sin(w_0 t)u(t)$.
9   State parseval theorem.
10 What is DTFT?

PART – B

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

11 a) Find the natural response of the system described by difference equation. $y(n)+2y(n-1)+y(n-2)=x(n)+x(n-1)$ with initial condition $y(-1)=y(-2)=2$.
   b) Determine convolution sum of two sequences $x(n)=\{1,2,1,1\}; h(n)=\{1,2,1,2\}$

12 a) List out the properties of Laplace transform. Laplace transform is generalized form of Fourier transform, justify.
   b) Find the Laplace transform of periodic saw tooth wave form as shown in fig.
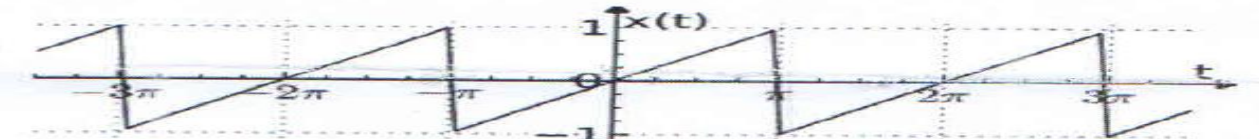
13 a) Consider a system described by differential equation

   $y(n)-0.5y(n-1)-0.25y(n-2)=x(n)$ determine $y(n)$ if $x(n)=(0.5)n\ \mu(n)$ using Z-Transform.
   b) Mention properties of ROC in Z-Transform.

14 a) Define the standard test signals.
   b) Find the inverse Laplace transform of $G(s)=s/(s+3)(s^2+4s+5)$

15   Write short notes on the following:
        a) Classification of discrete time signal
        b) Modulation or communication

16 a) List out the properties of Fourier properties. Derive any two.
   b) State and explain the symmetry properties of Fourier series.

17 a) Find the trigonometric Fourier series of half wave rectified sinusoidal signal.
   b) Give the details of classification of typical systems and signals.

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FACULTY OF ENGINEERING

B.E. V – Semester (AICTE) (ECE) (Main) Examination, July 2021

Subject: Antennas & Wave Propagation

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

Note: Missing data, if any, may be suitably assumed

PART – A

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

1 Define effective aperture of antenna.
2 Explain near field and far field of antenna.
3 Why loop antenna called as magnetic diploe?
4 Calculate the radiation resistance of dipole antenna of length $\lambda/8$ m.
5 What is bebinet principle of antenna?
6 What are the advantages of patch or micro strip antenna?
7 How is beam scanning is achieved with antenna array.
8 Define parasitic array.
9 What is the critical frequency for reflection at vertical incidence if the maximum value of electron density is 1.24×10^6 cm^{-3}?
10 State secant law.

PART – B

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

11 a) The radial component of the radiated power density of an infinitesimal linear dipole length $1 << \lambda$ is given by $W_{avg} = A_m \sin^2 \theta / r^2$ W/m^2
       Calculate the directivity of antenna.
   b) Explain the concept of retarded potential.

12 a) With the neat sketch explain the working of principle of helical antenna. What are the various modes under which a helical antenna can be operated?
   b) What are the applications of helical antenna?

13 a) Explain the different feeding methods used for parabolic reflector antenna.
   b) Explain the working of a folded dipole antenna.

14 a) Explain in detail the different causes of the array containing two isotropic sources.
   b) Discuss the principle of pattern multiplication.

15 a) Explain in detail about ground wave propagation.
   b) At what frequency, a wave must propagate for the D-region to have a refractive index of 0.5. Take an electron density equal to 400 for the given region.

16 a) Derive the relationship between effective aperture, directivity and effective length.
   b) Explain with suitable diagrams the working of the log periodic antenna. What are the applications of this antenna?

17   Write short notes on the following:
     a) Duct wave propagation
     b) Loop antenna

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FACULTY OF ENGINEERING
BE V - Semester (M/AE) (AICTE) (Main) Examination, July 2021

Subject: Heat Transfer

Time: 2 Hours   Max .Marks: 70

Note: Missing data, if any, may be suitably assumed

PART – A

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

1   Define thermal conductivity?
2   Explain the importance of Fourier number and write its significance?
3   Explain about critical radius of insulation?
4   Explain the situation of neglecting internal resistance in the solids and state the assumptions made in doing so?
5   State buckingham's π theorem?
6   Write three differences between Natural and forced convection heat transfer?
7   Explain about Wien's displacement law?
8   What is the shape factor between two infinitely long and parallel plates separated by a small distance?
9   Define NTU?
10 What is difference between pool boiling and flow boiling phenomenon?

PART – B

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

11 (a)   A furnace wall is assumed to be a rectangular slab which is made up of 3 different materials having thermal conductivities of K_1=100 w/mk, K_2=25 w/mk and K_3=1 w/mk . The thickness of the slabs are L_1= 10 cm, L_2= 5cm and L_3= 2.5 cm, with temperature of inner & outer surfaces maintained at 1000^0C and 100^0C respectively. Determine the following
      i.   Intermediate junction temperatures
      ii. Thermal gradients in each slab
      iii. Thermal Resistance of each slab
      iv. Rate of Heat flux
      v.   If the outer surface temperature has to be maintained at 25^0C, then determine the length L_3 for same rate of heat transfer per unit area.

(b) From fundamentals derive the temperature profile in a Hallow cylinder subjected temperature difference in radial direction.

12 (a)   A steel ingot of diameter 25mm and length 1m is initially maintained at a temperature of 550^0C and it is subjected to heat treatment in outside air which is maintained at 25^0 C, having heat transfer coefficient of 110 w/m^{2}K. The density, thermal conductivity and specific heat are 8450 kg/m^3, 25 w/mk and 490 J/kgk respectively. Assuming negligible temperature gradients within the solid, determine
      vi.   Time taken for the steel ingot surface to reach a temperature of 250^0C
      vii. Thermal time constant
      viii. Rate of Heat transfer
      ix.   Total amount of heat removed, within 24 hrs.
(b) Explain about significance of biot number?

13 (a) Air at a temperature of 25^0C and moving with 15 m/sec is flowing over a flat plate of length 80 cm maintained at 125^0C. The air is flowing along the length of the plate (Assume unit width of the plate). Determine

      x. Hydrodynamic and thermal boundary layer thickness at a distance of 25 cm from leading edge of the plate.

     xi. Average heat transfer coefficient

    xii. Critical length up to which the flow is laminar

   xiii. Convective heat transfer per unit width of plate.

  (b) Explain about Reynold's Calburn analogy?

14 (a) Two infinitely long and parallel plates are maintained at a temperatures of 27^0C and 727^0C. The emissivity's of the plates are 0.65 and 0.45 respectively. Determine the net radiant heat exchange between the two parallel plates?

  (b) If a shield of emissivity 0.01 on both sides is placed midway between the above plates, then determine the net radiant heat interchange between the original plates and surface temperature of the thermal shield?

15 (a) A Heat exchanger has water and exhaust gas as working fluids, in which water is entering at 25^0C, whereas exhaust gas is entering at 275^0C and leaving at 75^0C. The design requirement is to attain outlet water temperature higher than outlet temperature of exhaust gas. If the mass flow rate of water is 4 times less than mass flow rate of air , with Cp_{water} = 4KJ/KgK and $CP_{exhaustgas}$ = 1KJ/KgK , determine the amount of heat exchanged, if Overall heat transfer coefficient is 800 w/m^{2}K with surface area of 0.1m^2.

  (b) Explain about reasons for fouling of heat exchangers?

16   Explain about the following

     a. Thermal contact resistance

     b. Heisler & grobber chart solutions for infinite solids

     c. Conduction shape factor

17 (a) Air is flowing inside a horizontal tube of diameter 25 mm, at a mass flow rate of 0.25 kg/sec. The initial temperature of air is 25^0C, whereas the tube is maintained at a temperature of 175^0C , with auxiliary heating system. Determine the rate of heat transfer per mt length.

  (b) Explain about pool boiling phenomenon with pool boiling curve?

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FACULTY OF ENGINEERING
BE V - Semester (Prod) (AICTE) (Main) Examination, July 2021

Subject: Computer Aided Design & Manufacturing

Time: 2 Hours   Max .Marks: 70
Note: Missing data, if any, may be suitably assumed

PART – A
Answer any five questions.   **(5x2=10 Marks)**
1   Explain product life cycle?
2   What are the classification of Geometric modeling?
3   Write down the features of an NC machine?
4   Explain robot anatomy and configuration?
5   Explain variant process planning.
6   What is sequential engineering?
7   Explain the concept of NURBS?
8   What are machining centers?
9   Explain about machine vision?
10 What is reverse engineering?

PART – B
Answer any four questions.   **(4x15= 60 Marks)**
11 (a) Explain in detail about 2D transformations?
   (b) Explain in detail about IGES and STEP data exchange standards?

12 (a) Explain the differences for analytic and synthetic curves?
   (b) Give the differences between CSG AND B-rep?

13 (a) What are canned cycles.
   (b) Explain in detail about tool length and cutter radius compensation?

14 (a) Explain about Opitz coding system?
   (b) Illustrate the differences between CNC and DNC?

15 (a) What is CAPP? Explain about generative process planning?
   (b) Describe in detail about CMM?

16 (a) With a neat sketch explain scanning laser beam device?
   (b) Explain interpolation and approximate curve?

17 (a) Explain Graphical kernel system?
   (b) Write a note on Rapid prototyping.

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FACULTY OF ENGINEERING

B.E. V – Semester (AICTE) (CSE) (Main) Examination, July 2021

Subject: Web & Internet Technologies (Elective-II)

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

Note: Missing data, if any, may be suitably assumed

PART – A

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

1   What is web server? List of functions of web server.
2   List the differences HTML 4.x and HTML 5.
3   What is array in JavaScript give an example?
4   List methods of math and string objects in JavaScript.
5   What is namespace in XML?
6   Features of java enterprise edition.
7   Differences between java applet and java servlet.
8   Define session? List various session methods.
9   Draw and list the life cycle of JSP page.
10 List JSP implicit objects.

PART – B

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

11 a) Write a XHTML program to create student registration form and validate username should take alphanumeric values, password should take minimum four characters, phone number must take 8 digits only.
   b) Describe functions of HTTP phases.

12 a) Discuss control and looping statements in Java Script with suitable Eg.
   b) Discuss HTML DOM events in java script with example.

13 a) Explain XML schema with suitable example for DTD and XSD.
   b) Explain different statement objects in JDBC with suitable examples.

14 a) Discuss servlet API with suitable code.
   b) Discuss servlet Config object with example.

15 a) Explain the use of request and response objects in the communication between the browser and the web server in JSP.
   b) Discuss JSP page directives and include directives with example.

16 a) Discuss XML processors in details.
   b) Discuss HTML5 any five tags with example.

17   Write short notes on:
       a) Tag Extensions of JSP
       b) Discuss java.sql package
       c) AJAX basic features

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FACULTY OF ENGINEERING
BE V - Semester (CSE) (AICTE) (Main) Examination, July 2021

Subject: Embedded Systems (Elective-II)

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

Note: Missing data, if any, may be suitably assumed

PART – A

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

1. What are interrupts? List type of interrupts.

2. Explain the function of serial data mode-0 shift register mode.

3. Draw the diagram for timer 1 operation mode in 8051 microcontroller

4. List the different Jump and call program range.

5. What are different subtraction mnemonics in arithmetic operation?

6. What is analog and digital converter?

7. List different types of semaphore.

8. Difference between linker and locater in embedded system.

9. Define embedded system.

10. Classify the methods of memory manage.

PART – B

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

11 (a) Describe various design challenges of embedded system

   (b) Explain the various characteristics of embedded computing application

12 Explain the working of external memory in 8051 micro controllers with neat diagram.

13 (a) Explain decimal arithmetic in detail.

   (b) Explain division and multiplication operation

14 Explain in detail LCD and matrices keyboard interfacing in 8051 micro controllers

15 Explain various interrupt routines in an RTOS environment.

16 Describe in detail the process of debugging techniques.

17 Distinguish between CISC and RISC.

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FACULTY OF ENGINEERING
BE V - Semester (CSE) (AICTE) (Main) Examination, July 2021

Subject: Graph Theory (Elective-II)

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

Note: Missing data, if any, may be suitably assumed

PART – A

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

1   What is Euler path in graph?
2   What are the applications of graphs?
3   How do you find the cut set of a graph?
4   What is a cut vertex in graph theory?
5   How do you represent a directed graph?
6   Can a directed graph be disconnected?
7   What is a matching in a graph?
8   How do you find the perfect matching in a bipartite graph?
9   How do you prove a graph is connected?
10 What is dual of a graph?

PART – B

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

11 (a)   Define a graph and a subgraph. Show that for a subgraph H of a graph G Δ (H) $\leq$ Δ (G).
   (b)   Draw at least 3 non-isomorphic graphs on 4 vertices.

12 (a)   Prove that a tree of order $n \geq 2$ is a bipartite graph.
   (b)   Define cut-set in graph theory? Thereby briefly discuss the properties of cut set?

13 Show that in a directed graph where every vertex has the same number of incoming as
    outgoing paths there exists an Eulerian path for the graph.

14 Answer for each of these graphs: Is it planar? Is it bipartite?
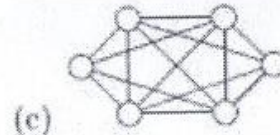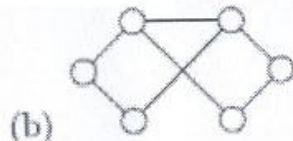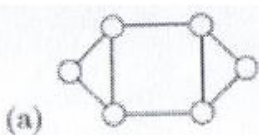
15 Explain the 5-colour theorem in planar graph?

16 Define isomorphic graph? Justify whether the following graphs are isomorphic or not?

..2..

..2..
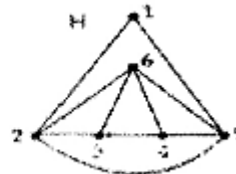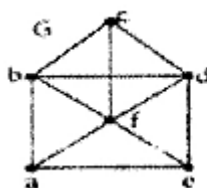
17   Write notes on
      (a)   Kuratowski's theorem
      (b)   Hall's theorem

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FACULTY OF ENGINEERING
BE V - Semester (CSE) (AICTE) (Main) Examination, July 2021

Subject: Data Analytics (Elective-II)

Time: 2 Hours   Max .Marks: 70

Note: Missing data, if any, may be suitably assumed

PART – A

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

1 What are the data attributes?
2 What is a simple attribute?
3 What is descriptive data analytics?
4 What is multivariate analysis?
5 What is data quality in data analytics?
6 How do you overcome data quality issues using data preprocessing methods?
7 What are the phases of data analytics lifecycle?
8 How is R used in data analytics?
9 What are data visualization techniques?
10 What are the three most important principles of data visualization?

PART – B

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

11 (a) Explain the proximity measures for ordinal attributes?
    (b) Explain the various numeric attributes in data analytics?

12   Discuss briefly about the polish company insolvency data?

13   Explain the dispersion multivariate statistics? With example.

14   Explain the various stages of data analytics life cycle?

15   Explain the stages in how to clean up the graphics in data visualization?

16   Explain the concepts data import and data export?

17   Write notes on:
        (a) Tokenization
        (b) Minkowski distance

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FACULTY OF ENGINEERING

B.E. V – Semester (AICTE) (IT) (Main) Examination, July 2021

Subject: Automata Theory

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

Note: Missing data, if any, may be suitably assumed

PART – A

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

1 Design a DFA which accepts the string beginning with 01 and ending with 11 over the alphabet $\Sigma=\{0,1\}$

2 Differentiate between DFA, NFA, ε-NFA

3 Obtain a regular expression representing strings of a's and b's having the length 2.

4 Construct an ε–NFA for the regular expression ab(a+b)* over the alphabet $\Sigma=\{a,b\}$.

5 State pumping lemma for regular language.

6 What do you mean by inherently ambiguous grammar?

7 Define pushdown automata.

8 Define parse tree with an example.

9 Check whether the string w=aaaa is a member or not for the given CFG according to CYK algorithm. S→AA, A→AA/a.

10 What is a recursive language?

PART – B

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

11   Obtain a DFA to accept the decimal strings divisible by 3, i.e. zero modulo-3 over the alphabet $\Sigma =\{0,1,2,3,4,5,6,7,8,9\}$

12   Convert the given NFA to its equivalent DFA

δ	0	1
→Q0	Q0,Q1	Q1
*Q1	Q2	Q2
Q2	ϕ	Q2

13 a) Mention the algorithm for minimization of DFA.

    b) Minimize the following DFA.

δ	a	b
→Q0	Q1	Q3
Q1	Q0	Q3
Q2	Q1	Q2
*Q3	Q5	Q5
Q4	Q3	Q3
*Q5	Q5	Q5

..2..

14 Give the RE for the string that ends in either ab or ba over the alphabet Σ ={a,b} then construct an ε–NFA for the obtain regular expression.

15 a) Explain restricted Turing machines.
   b) Write about LBA

16 a) Construct a PDA equivalent to the following grammar
      S→aAA, A→aS/bS/a
   b) Convert the given CFG into CNF
      S→OAO/1B1/BB
      A→C
      B→S/A
      C→S/ε

17 Construct a PDA for the language L={WCW^r} where Σ =(a,b}.

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FACULTY OF ENGINEERING
B.E. (Civil) V-Semester (CBCS) (Backlog) Examination, July 2021

Subject : Transportation Engineering–I

Time: 2 hours   Max. Marks: 70
Note: Missing data, if any, may be suitably assumed.

PART – A
Answer any five questions.   **(5x2 = 10 Marks)**

1 What is a gradient and what are the different types of gradient?

2 Define camber and list out the different types of camber.

3 What are the different vehicular characteristics which affect the road design?

4 What is the difference between Intersection at grade and grade separated Intersection?

5 What are the factors to be considered for design of pavements?

6 What is the importance of softening point test and ductility test?

7 Explain tyre pressure and contact pressure

8 What are the critical combination of stresses in the rigid pavement design?

9 Define the terms Primecoat and Tackcoat.

10 What are Granular Sub base roads?

PART – B
Answer any four questions.   **(4x15 = 60 Marks)**

11 a) Briefly explain the Engineering surveys needed for locating a new highway?
   b) Calculate the length of transition curve using the following data
      Design speed = 65km/hr, Radius of circular curve = 220m
      Allowable rate of introduction of super elevation (pavement rotated about the centre line) = 1 in 150
      Pavement width including extra widening = 7.6m
      Any other necessary data can be suitably assumed.

12 a) What is a Rotary intersection? Explain the design features of a Rotary intersection.
   b) Briefly explain the methods of collection and presentation of Origin and Destination data.

13 a) Explain the Fraas breaking point Test and thin film oven Test?
   b) Explain about viscosity grading method used to determine the gradation of bitumen binders.

14 a) Determine the vehicle damage factor based on the standard axle load of 80KN from the following data obtained from an axle load survey.

Axle load (KN)	30-40	40-50	50-60	60-70	70-80	80-90	90-100	100-110	110-120	120-130	130-140
Frequency (%)	5.76	6.45	7.22	6.96	9.63	12.04	14.02	10.49	8.43	7.82	5.25

b) Discuss in detail about the different types of joints that are provided in C.C. pavements. Also write their functions?

15 a) Explain briefly the concept of layer theory.
   b) What are the different causes of traffic accidents? Explain the measures to be taken to prevent accidents?
   c) Describe Rothfuch's method?

16 a) Explain the construction steps for Water Bound Macadam roads?
   b) Explain the construction steps for open graded premix carpet and state where this layer is useful.

17 Write short notes on the following :
   a) Over taking sight distance
   b) Speed and delay studies
   c) Different types of Cut backs
   d) Maintenance of C.C. pavements

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FACULTY OF ENGINEERING

B.E. V – Semester (EEE) (CBCS) (Backlog) Examination, July 2021

Subject: Electrical Machines-II

Time: 2 Hours   Max.Marks: 70

Note: Missing data, if any, may be suitably assumed

PART – A

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

1 List the two components of transformer no load current.
2 Write the expression for kVA rating corresponding to maximum efficiency
3 List the conditions for operating transformers in parallel.
4 What are the applications of tap changing transformers?
5 Draw the slip-torque characteristics of induction motor during motoring braking and generating modes of operation.
6 A 3-phasse, 50Hz, 4 pole indi8ction motor has standstill rotor impedance of 0.2+j4 ohms per phase. Find the additional resistance required to obtain maximum torque at the time of starting.
7 List the various types of starters used to start induction motors.
8 List the applications of induction generators.
9 The value of slip with respect to forward rotating field 4% is the value of slip with respect to backward rotating field.
10 List the applications of AC series motor.

PART – B

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

11 a) Deduce the approximate equivalent circuit of a transformer from exact equivalent circuit.
   b) A 5 kVA, 250/400 V, 50 Hz single phase transformer gave the following test data:
      O C Test: 250 V   2 A 100 W
      S C Test: 40 V   10A 200 W
   Determine the efficiency at full load, 0.8 power factor lagging.

12 a) Explain the Scott connection and prove that for balanced secondary load currents, the primary 3-phase currents are also balanced.
   b) Two single phase finance's working at 110 V are connected to a 3300 V, 3-phase supply through a Scott connected transformers. Determine the current in the 3-phse lines when the power taken by each furnace is 440 kW at unity power factor. Neglect the losses.

13   Illustrate the method of obtaining the performance of induction motor through circle diagram by conducting no load and blocked rotor tests.

14 a) Explain i) Star-delta starter ii) Rotor rheostat starter with neat diagrams.
   b) Illustrate the principle of operation of induction generator.

..2..

15 a) Illustrate the principle of operation of AC series motor and mention its applications.
   b) Explain the principle of operation of repulsion motor and its applications.

16 a) Derive the condition for zero regulation of a transformer.
   b) Explain the principle of operation of phase shifting transformer.

17a) Deduce the relationship between starting toque and maximum torque.
   b) Explain the construction and principle of operation of double cage induction motor with its equivalent circuit.

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FACULTY OF ENGINEERING

B.E. (Inst.) V-Semester (Backlog) Examination, July   2021

Subject : Instrumentation Systems

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

Note : Missing data, if any may be suitably assumed

PART – A

Note: Answer any Five Questions   **(5x2= 10Marks)**

1. Explain briefly the principle of stroboscope.
2. Explain the principle of eddy current tachometer.
3. What is the principle of thermocouple?
4. List any two applications of optical pyrometer.
5. Mention the importance of diverging cone in venturimeter.
6. Define vena contracta.
7. Write the principle of Bubbler system for level measurement.
8. Define relative humidity.
9. Define PWL.
10. Two machines of equal SPL of 85dB are switched ON simultaneously. What is the resultant SPL?

PART –B

Note: Answer any Four Questions   **(4x15= 60Marks)**

11 a) Explain in detail Drag cup rotor AC tachogenerator.
   b) Explain electro dynamic velocity transducer. Write its advantages and disadvantages.

12 a) Explain vapour pressure thermometer in detail.
   b) Explain measurement of temperature by radiation method.

13 a) Explain Pitot tube in detail.
   b) Explain the measurement of flow by ultrasonic method.

14 a) Explain the measurement of humidity by resistive method.
   b) Explain the measurement of liquid level with variable permeability method.

15 a) SPL measured at 10m from an automobile horn is 110dB. Determine the SPL at a distance of a) 20m and b) 80m. Assume that the inverse square law holds good between intensity and distance.
   b) Discuss signal to noise ratio.

16 a) Explain the measurement of liquid level by ultrasonic method.
   b) Explain lobed impeller meter in detail.

17. Write a short note on
   a) Electromagnetic flow meter.   b) Measurement of P^H

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FACULTY OF ENGINEERING

B.E. V-Semester (CBCS) (ECE) (Backlog) Examination, July 2021

Subject : Computer Organization & Architecture

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

Note : Missing data, if any may be suitably assumed
PART – A

Note: Answer any Five Questions   **(5x2= 10 Marks)**

1. Define computer organization and architecture.

2. Convert $(1110101.010011)_2$ into its hexadecimal equivalent.

3. What are the various phases of each instruction cycle?

4. Write the instruction formats for memory reference and register reference instruction

5. Write short notes on array processor.

6. Explain general register organization of a CPU

7. Explain Interrupt driven I/O.

8. Compare Synchronous and Asynchronous data transmission.

9. Define page in memory management.

10. Write short notes on magnetic Tapes.

PART- B

Note: Answer any Four Questions   **(4x15= 60 Marks)**

11. a) Explain Booth's algorithm with example
    b) Explain restoring and non restoring algorithm

12. a) Explain in detail about micro programmed control organization
    b) Draw and Explain Common Bus system.

13. a) Explain different types of addressing modes.
    b) Differentiate between RISC and CISC processor.

14. a) Discuss two methods of Asynchronous data transfer.
    b) Explain DMA transfer in detail.

15. a) Define page table with respect to associate memory
    b) Discuss in detail primary memory

16. a) Give the Flynn's classifications of computers.
    b) What are the memory management requirements?

17. Write short notes on

    a) Stack Organization   b) Virtual memory
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FACULTY OF ENGINEERING

B.E. V – Semester (CBCS) (M/P/AE) (Backlog)) Examination, July 2021
Subject: Operations Research

Time: 2 hours   Max. Marks: 70

(Note: Missing data, if any, may be suitably assumed)
PART – A
Answer any five questions.   **(5 x 2 = 10 Marks)**

1. What is degeneracy in Linear Programming Problem.
2. Explain the unbounded solution.P
3. What are the advantages of Dual of a primal in LP?
4. Define Post optimality analysis.
5. What are the different methods of finding initial feasible solution in transportation problem.
6. Explain the Hungarian method of Assignment problem.
7. What is group replacement policy.
8. Explain the 2 person zero sum game.
9. What roles do Poisson and exponential distributions play in Queueing theory?
10. Write about Single objective optimization problem.

PART – B
Answer any four questions.   **(4 x 15 = 60 Marks)**

11. Solve the following L. P. P.

$$\text{Maximize} \quad z = 3x_1 - x_2$$
$$\text{STC} \quad 2x_1 + x_2 \geq 2$$
$$X_1 + 3x_2 \leq 2$$
$$X_2 \leq 4$$
$$X_1, x_2 \geq 0$$

12. Solve the Dual of the following LPP

$$\text{Maximize } Z = 40\,x_1 + 100\,x_2$$
$$\text{STC} \quad 12\,x_1 + 6x_2 \leq 3000$$
$$4x_1 + 10x_2 \leq 2000$$
$$2x_1 + 3x_2 \leq 900$$
$$X_1, x_2 \geq 0$$

13. Solve the following Assignment problem.

MACHINES

	I	II	III	IV	V
A	16	20	18	10	12
B	19	26	18	12	10
MEN C	18	16	14	10	12
D	16	10	18	26	18
E	22	18	20	14	18

14. A computer contains 10,000 resistors. When any resistor fails, it is replaced.

The cost of replacing a resistor individually is Rs. 10 only. If all the resistors are replaced at a time, the cost of resistor would be reduced to Rs. 3.50. The percent surviving by the end of month t is shown below.

Month (t)	0	1	2	3	4	5	6
Percent surviving by the end of the month	100	97	90	70	30	15	0

What is the optimum replacement plan?

15. Six jobs go on first machine A and then over machine B. The order of the completion of jobs has no significance. The following table gives the machine times in hours for six jobs and machines.

Job No.	1	2	3	4	5	6
Time of Machines A	5	9	4	7	8	6
Time of Machines B	7	4	8	3	9	5

Find the sequence of the jobs for that machines and the total elapsed time in completer the job.

16. Determine optimum basic feasible solution to the following transportation

problem by North-West corner rule and Modi method.

			Supply
8	5	6	120
15	10	12	80
3	9	10	80
Demand 150	80	50	

17. Solve the following game theory using dominance method.

	I	II	III	IV	V
I	2	4	3	6	4
II	5	6	3	7	8
III	6	7	9	8	7
IV	4	2	8	3	3

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FACULTY OF ENGINEERING
BE V - Semester (CSE) (CBCS) (Backlog) Examination, July 2021

Subject: Computer Graphics

Time: 2 Hours   Max .Marks: 70
Note: Missing data, if any, may be suitably assumed

PART – A
Answer any five questions.   **(5x2=10 Marks)**
1   Represent a Graphics system along with its major elements?
2   What is a pen-plotter model?
3   What are the features for designing a good interactive program?
4   What are various logic operations in OpenGL?
5   Define orthographic projections?
6   Define axonometric projections?
7   What are the different types of light sourc4s in OpenGL?
8   Define Clipping?
9   What are the design criteria issues for curves and surfaces?
10 What are the reasons for using parametric polynomials?

PART – B
Answer any four questions.   **(4x15= 60 Marks)**
11 Explain in detail about synthetic camera models?

12 Explain the concept of double buffering with an example? How is it advantageous for animation?

13 Discuss transformation matrices in OpenGL?

14   Explain Bresenham's algorithm?

15 Discuss Bezier Curves and Surfaces.

16 Discuss about the following:
    (a) Picking
    (b) Parallel projection

17 Write notes on:
    (a) Polygon Rasterization
    (b) Interpolation

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FACULTY OF ENGINEERING
BE V - Semester (IT) (CBCS) (Backlog) Examination, July 2021

Subject: Computer Networks

Time: 2 Hours   Max .Marks: 70

Note: Missing data, if any, may be suitably assumed

PART – A

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

1   Define Computer Network. What are the uses of Computer Networks?
2   What do you mean by count-to-infinity problem?
3   What is the significance of mobile IP?
4   Draw the format of IPv6.
5   What is daemon process? List common daemons.
6   What is Out-Of-Band data?
7   Write any two differences between static and dynamic web documents.
8   What is the purpose of HTTP?
9   Distinguish between symmetric and asymmetric key cryptography.
10 What is digital signature?

PART – B

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

11 (a)   Discuss about a Critique of the OSI Model and Protocols.
   (b)   Explain Distance Vector routing algorithm with an example subnet.

12 (a)   What is fragmentation? Explain the two types of fragmentation.
   (b)   Describe the working principle of BGP.

13   Discuss elementary and advanced socket calls.

14 (a)   Application Layer is also known as user layer. Why? List the applications and services
          provided by Application Layer.
   (b)   Give architectural overview of WWW.

15 (a)   Describe RSA algorithm with a suitable example.
   (b)   Explain Pretty Good Privacy with the help of neat sketch.

16 (a)   Classify routing algorithms and state the characteristics of routing algorithms.
   (b)   What is Internetworking? What arte the different devices used to interconnect dissimilar
          networks at different layer levels?
   (c)   List the steps involved in RPC.

17 (a)   Compare features of POP3 and IMAP.
   (b)   What is communication security (IPSec)? Explain.

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