FACULTY OF ENGINEERING
B.E. (IT) VI - Semester (AICTE) (Backlog) Examination, March / April 2022

Subject: Advanced Computer Architecture
Professional Elective - II

Time: 3 Hours   Max. Marks: 70

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions.   **(10 x 2 = 20 Marks)**

1. Define Theory of parallelism.

2. Differentiate between multi computers and multi processors.

3. What is the state of computing?

4. What are uni processor systems?

5. What are multi vector computers?

6. Briefly explain about the interconnection networks.

7. What are static topologies?

8. How is the case study of sun microsystems microprocessor carried out. Briefly explain.

9. Define the benchmarks.

10. What is a shared memory?

PART – B

Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11. (a) Explain in detail about the Advanced computer architecture.
    (b) Differentiate between multiprocessors and multicomputer systems.

12. (a) Differentiate between linear and non-linear pipeline processors.
    (b) Explain in detail the instruction pipeline design.

13. (a) Describe in detail the vector architecture and design.
    (b) What is vector processor model explain?

14. (a) Describe parallel array processor model.
    (b) Illustrate the memory organizations in detail.

15. (a) Explain in detail the cache coherence and synchronization mechanism.
    (b) Explain in detail the parallel computer model.

16. (a) Explain in detail the enhancement of uni processor systems.
    (b) Explain in detail the Distributed Memory Architecture.

17. Write short notes on :
    (a) Dynamic topologies.
    (b) Three generation of computer.
    (c) SIMD computers.

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FACULTY OF ENGINEERING
B.E. III / IV (Civil) II – Semester (NON-CBCS) (Backlog) Examination, March / April 2022
Subject: Theory of Structures - II

**Time: 3 Hours** **Max. Marks: 75**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(25 Marks)**

1. Define Enveloping Parabola.
2. The absolute maximum Shear force in a girder subjected to a UDL shorter than span occurs at a section _____.
3. What is a Influence line diagram.
4. Define EUDLL.
5. State the properties of flexibility matrix.
6. What do you mean by Flexibility and Stiffness?
7. Write stiffness matrix for cantilever beam by considering flexural deformations.
8. The cables of suspension bridge of 200 m span and central dip 15 m, supports of the cable is at the same level. Calculate the length.
9. Explain how the stiffness coefficients are obtained for a two noded beam element? Neglect axial deformations.
10. A Pratt truss of span 32m has 8 panels and 3m height. Determine the force in the bottom chord of 4th panel due to a UDL of 20 kN/m over the entire span.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11. Two-wheel loads of 60 kN and 40 kN spaced 6m apart cross a girder of span 16 m with 40 kN load loading. Draw the maximum S.F.D. and B.M.D.

12. The following system of wheel loads as shown in Figure 1 are rolling on a simply supported girder of 36m span with 160 kN load loading. Determine the max. S.F. and max. B.M. at the quarter span.

100 kN		100 kN		200 kN		200 kN		160 kN
	3m		4m		4.5m		3m	
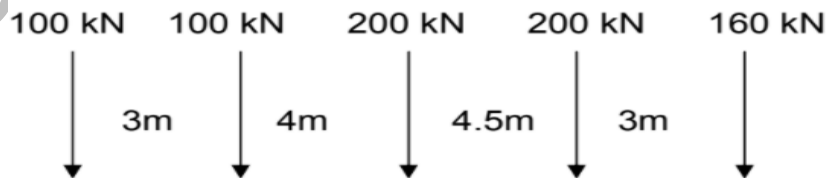
Figure 1

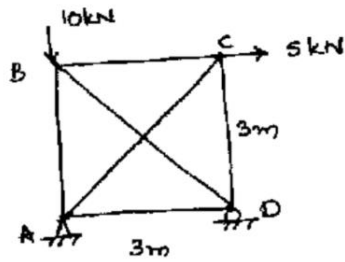13. Analyse the truss shown in Figure 2 using stiffness matrix method. Assume AE as constant.

Figure 2

14. Draw the ILD for the members U3U4, L4U3, U3L3 and L3L4 of a Pratt truss shown in Figure 3.
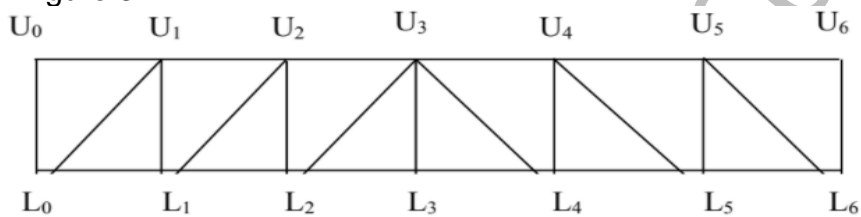

Figure 3

15. Analyse the beam shown in Figure 4 using flexibility matrix method and draw S.F.D. and B.M.D.
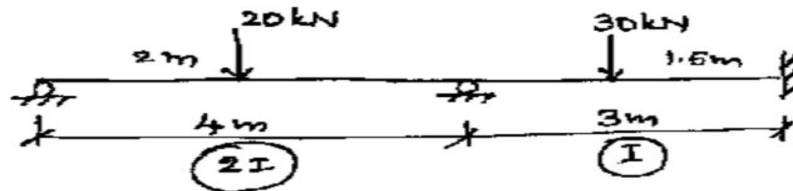

Figure 4

16. A suspension bridge with a parabolic cable of span 100 m and a dip of 15 m is stiffened by a three Hinged stiffened girder to restrain the cable to maintain its parabolic shape. The stiffening girder carries Two concentrated load of 20 kN each placed at 15 m and 30 m from left support. Evaluate B.M and S.F in the girder at a section 40m from left hinge. Also determine maximum tension in the cable.

17. Write short notes on any **TWO** of the following:
    (a) Degree of Freedom.
    (b) Warren girder.
    (c) Direct Element method.

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FACULTY OF ENGINEERING
BE III / IV (EEE) II – Semester (NON-CBCS) (Backlog) Examination, March / April 2022
Subject: Switch Gear and Protection

Time: 3 Hours   **Max. Marks: 75**

(Missing data, if any, may be suitably assumed)
PART – A
Note: Answer all questions.   **(25 Marks)**

1. Write the universal relay torque equation?
2. Explain primary and backup protection
3. Explain the operating principle of impedance relay
4. Draw the characteristics of distance relay on R-X diagram and mention its application.
5. What is Inter protection?
6. Where is buchholz relay used, what is significance of it
7. In a 132 KV system, the inductance and capacitance upto the location of circuit breaker are 0.4H and 0.015 μF respectively. Determine the maximum rule of the restriking voltage across the contacts of the circuit breaker and maximum value of RRRV.
8. List the different types of circuit breaker.
9. What is a surge absorber?
10. What is the significance of Basic Insulation level? Suggest a suitable insulation coordination scheme for 400 kV substation?

PART – B
Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11. a) Derive an expression for torque developed in induction relay.
    b) With a neat diagram explain the protective scheme for ring mains.

12. a) Explain 3-zone protection of transmission lines.
    b) What is amplitude comparator? How it can be converted to phase comparator?

13. a) Explain the protection of transformer using buchholz's relay.
    b) Explain protection of generator against loss of excitation.

14. Derive an expression of restriking voltage, RRRV and maximum RRRV.

15. a) Draw the flow chart for microprocessor based over current relay?
    b) What is tower footing resistance? Discuss different methods to reduce this resistance.

16. a) With the help of neat diagram explain the operation of expulsion type lightning arrestors.
    b) Explain in detail about insulation coordination.

17. Write short notes on:
    a) Under reach and over reach of a distance relay.
    b) Current chopping in a CB

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FACULTY OF ENGINEERING
B.E. III / IV (ECE) II - Semester (NON-CBCS) (Backlog) Examination, March / April 2022
Subject: Antennas and Wave Propagation

Time: 3 Hours   **Max. Marks: 75**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions.   **(25 Marks)**

1 Define retarded vector potential.
2 Draw the radiation pattern of a vertically oriented dipole.
3 State the Fris transmission formulae.
4 What is the condition for circular polarization in helical antenna?
5 Distinguish between far field and near field of an antenna.
6 List the application of log periodic antenna.
7 What is the significance of $2D^2/\lambda$ in antenna measurements?
8 State the relationship between critical frequency and ionic density in an ionospheric layer.
9 What is duct propagation?
10 Calculate the radio horizon distance for an antenna of height 10mts.

PART – B

Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11 (a) Explain the effective aperture of an antenna. How is it significant in the power received by an antenna and its directivity.
   (b) Define effective length and Radiation intensity.

12 Derive the electric and magnetic field radiated by a hertzian dipole placed along the z axis centered at the origin.

13 Consider a BSA array with 4 isotropic sources placed at $\lambda/2$ spacing. Derive its pattern maximas and pattern minimas and draw its radiation pattern.

14 (a) Describe a method of measuring the antenna gain.
   (b) A parabolic reflector of diameter 1.22mts with effective aperture equal to 50% of physical aperture working at 20GHz. Compute the gain(dB) of the antenna.

15 With a neat sketch describe ionospheric propagation and define
   (a) Critical frequency   (b) MUF   (c) skip distance   (d) critical incidence angle.

16 State the working principle of lens antenna. Briefly explain its construction. What are the types of lens antenna? List their applications.

17 Write short notes on any two:
   (a) Horn Antenna
   (b) Tropospheric scatter
   (c) Parabolic reflector
   (d) Effect of earth on vertical patterns.

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FACULTY OF ENGINEERING
B.E. III / IV (MECH/AE) II Semester (NON-CBCS) (Backlog) Examination, March / April 2022
Subject: CAD/CAM

Time: 3 hours   **Max. Marks: 75**
(Missing data, if any, may be suitably assumed)
PART – A
Note: Answer all questions.   **(25 Marks)**

1 Briefly define and explain CIM.
2 What do you understand by synthetic curves?
3 Define Wire frame modeling used in CAD/CAM.
4 Give an example of surface modeling explaining the procedure simultaneously.
5 What do you understand by data exchange? Name any two data exchange specifications.
6 Explain the robot anatomy with a simple figure.
7 Define Group Technology.
8 What is the advantage of an FMS system?
9 Define RPT in simple terms.
10 What is meant by a DNC system?

PART – B
Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11 Explain the product cycle in detail with the help of neat block diagram.

12 What are the three different types of modeling in CAD/CAM? Explain each briefly.

13 Write about any three types of transformations with matrix equations.

14 Explain the IGES data exchange specification in detail.

15 With the help of a neat sketch explain the SCARA robot configuration.

16 What are the different parts of an FMS system?

17 a) Briefly explain the two types of CAPP systems.
    b) What do you understand by quality control?

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FACULTY OF ENGINEERING
BE III / IV (PROD) II - Semester (NON-CBCS) (Backlog) Examination, March / April 2022
Subject: Turbo Machinery

Time: 3 hours **Max. Marks: 75**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions. **(25 Marks)**

1 Classify the various types of turbo machines.
2 Define specific speed of a pump and write its expression.
3 Define critical pressure ratio.
4 What is the significance of priming in centrifugal pump?
5 Define unit quantities for the Turbines.
6 Draw the velocity triangles for an axial flow reaction Turbine.
7 Draw velocity diagram of Francis turbine.
8 Define degree of reaction.
9 Explain the differences between impulse and reaction steam turbines.
10 List the merits of open cycle gas turbine over closed cycle gas turbine.

PART – B

Note: Answer any five questions. **(5 x 10 = 50 Marks)**

11 (a) A jet of water with a velocity of 60m/sec strikes a curved vane moving at 30m/sec, the jet makes an angle of deflection is 120^0. Determine the work done of water and Hydraulic efficiency.
   (b) Application of aerofoil theory to Turbo machinery blades.

12 A centrifugal pump having outer diameter equal to two times the inner diameter and running at 1200rpm works against a total head of 75 m. The velocity of flow through the impeller is constant and equal to 3 m/s. The vanes are set back at an angle of 30° at outlet. If the outer diameter of impeller is 600 mm and width at outlet is 50 mm, determine: a) vane angle at inlet b) work done per second by impeller c) manometric efficiency.

13 (a) Explain with a neat sketch, the working of a single stage centrifugal pump.
   (b) Differentiate between axial and centrifugal compressors.

14 Discuss the working principal of Pelton wheel with a neat sketch.

15 In a single stage impulse turbine, the nozzle angle is 30˚ to the tangential direction and the blade speed is 210m/sec. the steam speed is 550m/sec. blade friction coefficient is 0.85. Assuming axial exit and flow rate of 700 kg/hr, determine the blade angles and power developed by the turbine. Also find the absolute velocity of steam at exit.

16 In a gas turbine plant, operating on Joule cycle, air is compressed from 1 bar and 15°C to a pressure of 4.5 bar. It is then heated to 700°C in a combustion chamber and expanded to a pressure of 1 bar. Calculate the net work done, cycle efficiency and work ratio.

17 (a) Draw performance and characteristic curves of turbines.
   (b) Methods of improving thermal efficiency of gas turbines.

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FACULTY OF ENGINEERING
B.E. III / IV (CSE) II Semester (NON-CBCS) (Backlog) Examination, March / April 2022
Subject: COMPILER CONSTRUCTION

Time: 3 hours   **Max. Marks: 75**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions.   **(25 Marks)**

1 What is Bootstrapping?
2 Write short notes on Input buffering
3 Why SLR and LALR are more economical to construct than canonical LR?
4 What is SDD? What are the applications of syntax directed translation?
5 What is type checking?
6 What are Lexical Errors?
7 Define Control Flow
8 Define CFG. Write CFG to recognize palindrome
9 What is Bottom UpParsing?
10 What is basic block?

PART – B

Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11 a) Explain various phases of Compiler with neat diagram.
   b) Write short notes on LEX tool.

12 a) What is Ambiguous grammar give example?
   b) Write about Brute Forcing.

13 a) Write about syntax directed definitions.
   b) Explain the data structures used for Symbol table implementation.

14 a) Discuss about Garbage Collection in detail.
   b) Explain Heap management.

15 a) Explain issues in Code Generation.
   b) Describe data flow analysis in detail.

16 Explain various representation of three address code of an expression X=-a*b+-a*b.

17 Write short notes on:
   a) Explain problems in top-down parsing
   b) Explain shift reduce parser.

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FACULTY OF ENGINEERING
B.E. III / IV (IT) II – Semester (NON-CBCS) (Backlog) Examination,
March / April 2022
Subject: Compiler Constructions

Time: 3 hours   Max. Marks: 75
(Missing data, if any, may be suitably assumed)
PART – A
Note: Answer all questions.   **(25 Marks)**

1. What is bootstrapping a compiler?
2. Give the parse tree for the statement $(a := b + c^* 60)$.
3. What is CFG? Give example.
4. What is a parse tree?
5. What are synthesized attributes?
6. What is type checking?
7. What is input to code generator?
8. Write the indirect triple for the expression X: = -a*b+ -a*b.
9. What is activation record?
10. What is code optimization? Give example for any two optimization techniques.

PART – B
Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11. (a) Explain Bootstrapping and porting with neat diagram.
    (b) Discuss about the cousins of the compiler.

12. Explain the phases of the compiler in detail. Write down the output of each phase for the expression a:=b+c* 50.

13. Consider the grammar construct predictive parsing table.
    $$S \rightarrow (L)/a$$
    $$L \rightarrow L, S/S$$
14. Construct LALR parsing table for the grammar
    $$S \rightarrow CC$$
    $$C \rightarrow cC$$
    $$C \rightarrow c|d$$

15. Explain Activation tree and activation Record with an example.

16. Explain about flow of control statements with an example code.

17. Explain in detail about Local & loop Optimization.

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FACULTY OF ENGINEERING
BE (Civil) VI SEMESTER (CBCS) (Backlog) Examination, March / April 2022
Subject: Theory of Structures – II

Time: 3 Hours   **Max. Marks: 70**
(Missing data, if any may be suitably assumed)
PART – A
Note: **Answers all questions**.   **(10 x 2 = 20 Marks)**

1. Find Max B.M for a girder a span 20m when a moving load of 10kN/m, dispensed over 6m is crossing over it from left to right.
2. Explain EUDL of moving load
3. Name the softwares used in civil structural engineering
4. What is the difference between flexibility matrix and stiffness matrix?
5. Write the advantages of stiffening girder in cable bridges
6. A warren girder truss of 30m span 5 panels has a height of 4m. Sketch the influence line for force in top chord of second panel. Calculate the member force, if the entire span is loaded by a UDL of 20kN/m.
7. The cable of a suspension bridge of 200m span and central dip 15m has its support at the same level. Calculate the length of cable.
8. Explain the usage of influence line diagram (ILD)
9. Define absolute maximum shear force.
10. What are the difficulties with direct stiffness method of formulation?

PART - B
Note: Answers any five questions.   **(5 x 10 = 50 Marks)**

11. A system of loads consisting of 150kN, 120kN and 100kN separated by distance 0.8m, 1m and 1.2m respectively moves from left to right on simply supported girder of span 8m. Find absolute maximum BM by using the concept of ILD's.

12. A Pratt truss of 30m span of 6 panels each of 5m. The height of truss is 5m. Draw the influence line diagram for the forces in members of the third panel from left and determine the maximum forces in these mebers due to a dead load of 12kN/m.

13. Analyse the continuous beam as shown in the figure using stiffness matrix method Draw BMD.
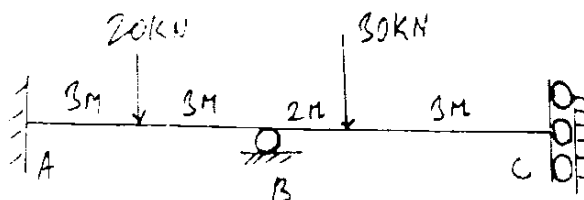
14. Analyse the given beam as shown by flexibility method of analysis. Draw BMD.
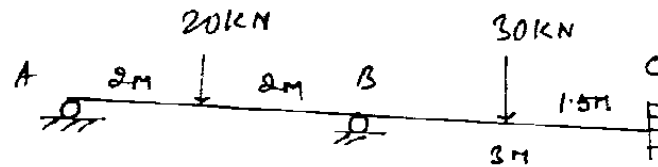
15. A suspension bridge of 200m span has two three hinged stiffening girders supported by two cables having central dip of 20m. The roadway has a width of 12m. The right half of the bridge is loaded with the dead load of 10kN/m2. And live load of 10kN/m2. Determine the reactions. Find the SF and BM at 40m from left end.

16. Two wheel loads of 60kN and 40 kN spaced 6m apart cross a girder of span 16m with 40kN load leading. Draw SF and BM Envelope's.

17. Write short notes on the following:
    a) Focal length
    b) Direct element method
    c) Classification of structural analysis

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FACULTY OF ENGINEERING
B.E. (EEE) VI - Semester (CBCS) (Backlog) Examination, March / April 2022
Subject: Switchgear and Protection

Time: 3 Hours   **Max. Marks: 70**
(Missing data, if any may be suitably assumed)

PART – A
Note: **Answers all questions**.   **(10 x 2 = 20 Marks)**

1. Explain the classification of relays.
2. Write the advantages of static relays over electromagnetic relays.
3. Explain how amplitude comparator can be used as phase comparator
4. Define distance relay and explain R-X diagram?
5. What is magnetizing inrush current?
6. What is differential relay?
7. Give the classification of circuit breaker based on operating voltages.
8. In a 132 KV system, the inductance and capacitance up to the location of circuit breaker are 0.4H and 0.015 μF respectively. Determine the maximum rule of the restricting voltage across the contacts of the circuit breaker and maximum value of RRRV.
9. Why are lightning arresters and surge absorbers used together in important substations?
10. What is a surge absorber?

PART - B
Note: Answers any five questions.   **(5 x 10 = 50 Marks)**

11. a) With the help of suitable diagram explain the importance of back – up protection.
    b) With a neat diagram, explain the protective scheme for ring main system

12 Explain stepped tie-distance characteristics of three distance relays units used for I, II and III zone protection?

13. Write short notes on:
    a) Buchholz relay   b) Explain protection of generator against loss of excitation.

14 a) Explain how arc is initiated and sustained in a circuit breaker when the circuit breaker contacts separate?
    b) Discuss two methods of are interruption in circuit breakers.

15. Write a short note on
    a) Estimation of over voltage using Bewely Lattice diagram.
    b) Peterson Coil?

16. Write short notes on:
    a) Earth fault and phase fault protection
    b) With the help of flow chart explain operation of microprocessor based over current relay.

17. Explain construction and working principle of Air Blast & MOCB Circuit Breaker with neat diagram?

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FACULTY OF ENGINEERING
B.E. (EIE) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Process Control

Time: 3 Hours   **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions.   **(10 x 2 = 20 Marks)**

1   What is static error?
2   Define proportional Controller.
3   Explain Automatic Controller with example.
4   What is PLC Scan?
5   Draw the ladder diagram for AND Gate.
6   What is steady state velocity error?
7   What is the role of counter in PLC processing?
8   What are the characteristics of control valve?
9   Define Stabilization.
10 Explain Valve limit switches.

PART – B

Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11 With an example explain two position controller and multiposition controller.

12 Explain process degree of freedom.

13 Explain the programming pattern of PLC with example.

14 Compare proportional, Integral and Derivative Controllers.

15 Explain Hydraulic Actuator.

16 Explain the Relay controller with a neat diagram.

17 Draw the Block diagram of two position floating controller and explain it.

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FACULTY OF ENGINEERING
B.E. (ECE) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Antennas and Wave Propagation

Time: 3 Hours   **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)
PART – A
Note: Answer all questions.   **(10 x 2 = 20 Marks)**

1. Differentiate between Directivity and Directive gain.
2. Define HPBW and BWFN of an antenna.
3. What are the advantages of loop antenna over monopole antenna?
4. List out the applications of helical antenna.
5. Differentiate 'V' antenna from rhombic antenna.
6. What are advantages and disadvantages of patch antenna?
7. Define pattern multiplication pattern for antenna array.
8. Distinguish between broadside array and End fire array.
9. Define the terms (a) virtual height   (b) Skip Distance.
10. Define Secant Law.

PART – B
Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11. (a) The radiation intensity of a certain antenna is $U_m \sin\theta \sin^2\Phi$ for ($0 \leq \theta \leq \pi/2$) and ($0 \leq \Phi \leq 2\pi$) and zero elsewhere. Determine Directivity of antenna.
   (b) Define the following (i) Beam solid angle (ii) Radiation Intensity (iii) Effective length (iv) Antenna Temperature.

12. What is Hertzian dipole? Obtain the expression for the radiation fields of it.

13. (a) With neat sketch explain about micro strip antenna.
   (b) Explain the cassgrain feeding of paraboloid.

14. (a) Derive the array factor of n-elements uniform linear array.

   (b) What is an antenna array? What are the reasons for using antenna arrays?

15. (a) Explain in detail about ground wave propagation.
   (b) Explain the mechanism of radio wave bending by the ionosphere.

16. (a) Derive the relationship between effective aperture and directivity.

   (b) Explain with suitable diagram the working of the Helical Antenna.

17. Write short notes on the following:
   (a) Loop antenna.
   (b) Folded Dipole antenna.

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FACULTY OF ENGINEERING

BE (MECH) VI - Semester (CBCS) (Backlog) Examination, March / April 2022
Subject: Hydraulic Machinery & Systems

Time: 3 Hours   **Max marks: 70**

(Missing data, if any may be suitably assumed)

PART – A

Note: Answers all questions.   **(10 x 2 = 20 Marks)**

1. The magnitude of the force exerted by a jet of cross sectional area 200^0 mm^2 and of velocity 25m/s on a fixed smooth curved vane which deflects the jet by 1200 is given by: a) 21.65   b) 20.70   c) 21.56   d) 23.72

2. The force exerted by a jet of water on a stationary vertical place in the direction of jet is given by
   a) $Fx = \rho AV^2 \sin^2\theta$ b) $Fx = \rho AV^2[1+\cos\theta]$ c) $F_x = \rho AV^2$ d) none of the above

3. Define negative slip in pumps.

4. Explain with a neat sketch, single and double acting reciprocating pumps.

5. Classify the different types of turbines and pumps.

6. What is the significance of priming in centrifugal pump?

7. What are the conditions that influence the performance of turbines?

8. Explain the function of draft tube?

9. The power developed by a hydraulic cylinder equals the product of its
   a) Force and velocity   b) Length and time

   c) Discharge and area   d) None of the above

10. The hydraulic power developed by pumps is converted back into mechanical energy by a) Hydraulic actuators   b) external pump
    c) Compressor   d) all of the above

PART - B

Note: Answers any five questions.   **(5 x 10 = 50 Marks)**

11. A jet of water of 5 cm dia impinges on a curved vane and deflected through an angle of 175 deg the vane moves in the same direction as that of jet with a velocity of jet 35 m/s. If the rate of flow is 170 Lps. Determine the component force on the vane in the directional motion. How much would be power developed what would be the vane efficiency?

12. Explain the working principle of single acting and double acting reciprocating pump. Derive the power developed in case of single acting pumps.

13. Explain with a neat sketch the working of a single stage centrifugal pump. List merits and demerits over reciprocating pump.

..2

14. For a Kaplan turbine with a runner diameter 4meter the discharge is 60 cubic

 meters/sec and the hydraulic and mechanical efficiencies 90% and 84% resp.
The dia of boss is 0.3 times the runner dia and speed ratio is 2.0. Assuming that

discharge is free and there is no whirl at outlet, calculate the net available head
on the turbine and specific speed.

15. Explain working of Hydro mechanical and electro hydraulic servo systems.

16. With a neat labeled diagram, explain the construction and working of Pelton

Turbine.

17. a) Difference between inward and outward radial flow turbine.
    b) Speed control methods of actuators.
    c) Derive expression for impact of jet on moving inclined vane.

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FACULTY OF ENGINEERING

B. E. (PROD) VI – Semester (CBCS) (Backlog) Examination,
March / April 2022
Subject: Modern Machining & Forming Methods

Time: 3 hours   **Max. Marks: 70**

(Missing data, if any may be suitably assumed)

PART – A

Note: Answer all questions.   **(10 x 2 = 20 Marks)**

1 Write the mechanics of material removal in Ultrasonic Machining
2 Give schematic diagram of Water Jet Machining
3 What are the functions of dielectric medium in Electric Discharge Machining?
4 What are the advantages of hot machining?
5 How is arc controlled in Plasma Arc Machining Process?
6 Write the applications of Electron Beam Machining process
7 State the advantages of rubber pad forming over conventional forming
8 What is the effect of standoff distance in explosive forming?
9 Differentiate between compression and radial draw forming
10 What are the applications of hydrostatic forming?

PART – B

Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11 (a) List out the process parameters, advantages & applications of Ultrasonic Machining.
   (b) Explain the working of Abrasive Jet machining along with its advantages & applications.
12 (a) Explain the working principle of Electro Discharge Machining with a neat sketch.
   (b) Discuss the characteristics, advantages & limitations of Electro Chemical Machining.
13 (a) Discuss the different process parameters, advantages & limitations of Laser Beam Machining.
   (b) Explain the principle of generation and control of electron beam with a neat Sketch in electron beam machining.
14 (a) Explain the principle of Hydro Forming process along with neat sketch. Give its advantages.
   (b) Explain 'High Energy Rate Forming' process, give its advantages & applications.
15 (a) Explain the principle of water hammer forming, give its applications.
   (b) Explain the methods of tube spinning technique with a neat sketch.
16 (a) Discuss the different process parameters, advantages & limitations of Water Jet Machining.
   (b) Explain about High speed machining process.
17 Write a short note on
   (a) Explosive forming process
   (b) Stretch forming process.

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FACULTY OF ENGINEERING
B.E. (AE) VI Semester (CBCS) (Backlog) Examination, March / April 2022
Subject: Computer Aided Design Analysis and Manufacturing

Time: 3 hours   **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions.   **(10 x 2 = 20 Marks)**

1 State the CAD tools required to support a cad/cam system from conceptualization to documentation.
2 State any four Wire-frame Entities.
3 Explain Translation.
4 What is reflection?
5 What is computer aided process planning?
6 Explain difference between repeatability and accuracy of robot with neat sketch.
7 What are functions of DNC?
8 Define interpolation.
9 Define a robot.
10 Define FMS and mention its advantages and limitations.

PART – B

Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11 a) Discuss the characteristics of Bezier Curve on the Bernstein Polynomials.
    b) Explain the differences for analytic and synthetic curves?

12 a) Explain the polyhedral classes used in c-rep solid modeling.
    b) Explain the CSG(C-rep) solid model building schemes
       (i) r-sets (bounded solid primitives (ii) non-r sets (half spaces unbounded).

13 a) Explain about IGES format?
    b) Write down the detailed steps involved in solving a FEA problem?

14 a) Write down the differences between CNC and DNC.
    b) Explain absolute programming and incremental programming with an example.

15 a) i) Sketch the working of Coordinate Measuring machine (CMM),
       ii) What type of geometric features are measured on CMM.
    b) What is CAPP? Explain about generative process planning?

16 a) In geometric transformation-state the transformation matrix for
       (i) Scaling
       (ii) reflection.

17 Construct Bezier curve with four coordinates points A (1, 1), B (2, 3) C (4, 3) and D (3, 1).

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FACULTY OF ENGINEERING
B.E. (CSE) VI - Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Web Programming

Time: 3 Hours   **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A

Note: Answer all questions.   **(10 x 2 = 20 Marks)**

1. What are Frames and Frameset in HTML?
2. What is list? Explain different types of lists.
3. Distinguish between SAX and COM.
4. What is XML name space?
5. How to create variables in Java Script?
6. What is AJAX?
7. List out JSP implicit objects.
8. How many JSP Scripting elements are there? What are they?
9. How to declare string in PHP?
10. What is persistent cookie?

PART – B

Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11. (a) Discuss in detail about multimedia objects in HTML.
    (b) Write short notes on HTTP

12. (a) What is the use of XML namespaces? Explain in detail with an example.
    (b) Give the syntax of an XML document and explain how a basic XML document is created with an example.

13. (a) Explain how to write functions in Java script.
    (b) Write the difference between Java Script and AJAX?

14. (a) What is Servlet? Explain life cycle of java servlet.
    (b) Write short notes on Java Server Page.

15. (a) Explain pattern matching in PHP.
    (b) Explain about database connectivity with PHP with an example.

16. (a) Define a session. Explain different session handling mechanisms in web application.
    (b) Write a java Script code to multiply two numbers?

17. (a) Explain in detail about XSLT with an example.
    (b) Explain XML document structure with an example.

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FACULTY OF ENGINEERING
B.E. (IT) VI – Semester (CBCS) (Backlog) Examination, March / April 2022

Subject: Compiler Construction

Time: 3 Hours   **Max. Marks: 70**

(Missing data, if any, may be suitably assumed)

PART – A
Note: Answer all questions.   **(10 x 2 = 20 Marks)**

1 Define Cross Compiler.
2 Write the structure of a lex program.
3 Write the difference between a pass and a phase
4 Compare SLR and LALR parser.
5 What are different Bottom-up parsing techniques?
6 Define dependency graph.
7 Define Synthesized and Inherited Attributes.
8 Define activation tree.
9 Design DAG for the following code:

   $a = b + c$
   $b = b – d$
   $c = c + d$
   $e = b + c$

10 What is unreachable code?

PART – B
Note: Answer any five questions.   **(5 x 10 = 50 Marks)**

11 a) Write about role of Lexical Analyser.
   b) Explain the Bootstrapping and Porting process.

12 Perform LR passing on $S \rightarrow AA$.
$$A \rightarrow aA/b$$
13 Explain in detail about
   a) Type checking
   b) Syntax directed translation

14 a) Explain the memory hierarchy of a computer with a neat diagram.
   b) Explain the problems with manual dealloaction request.

15 a) Explain common sub expression elimination, dead code elimination
   b) Explain eliminating redundant load and store, flow of control optimization

16 List and explain major data structures used in compiler.

17 Explain translation process with a neat diagram.

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