

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR — SECOND SEMESTER

Branch - EEE

HIGH VOLTAGE ENGINEERING

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each unit.

UNIT - I

1. (a) Discuss in detail about voltage multiplier circuits.
(b) Discuss ripple in cascaded voltage multiplier circuits.

Or

2. (a) What are the components of multistage impulse generator? Explain.
(b) How impulse currents are generated? Explain with the neat sketch.

UNIT - II

3. Discuss the various techniques for the measurement of Impulse voltage.

Or

4. Explain with a neat sketch, how rod gaps can be used for measurement of high voltages compare its performance with a sphere gap.

UNIT - III

5. (a) Explain the synthetic testing of circuit breakers.
(b) What are the tests done on bushing? Explain them.

Or

6. What is the significance of impulse tests? Briefly explain the impulse testing of insulators.

UNIT - IV

7. Explain the operation of high voltage schering bridge when the test specimen
(a) is grounded
(b) has high loss factor?

Or

8. Explain the concept of apparent charge in partial discharge measurements. Describe a simple experiment technique to measure partial discharge.

UNIT - V

9. (a) What is cavity? Explain cavity breakdown of solid dielectrics.
- (b) What are composite dielectrics? Give examples.

Or

10. Explain the various break down theories involved in commercial liquid dielectrics.
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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR — SECOND SEMESTER

Branch — EICE

BIO-MEDICAL INSTRUMENTATION

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT I

1. (a) What is action potential and resting potential? Describe the characteristics of resting potential with reference to Nernst Equation. (6)
- (b) Define half cell potential. What are polarizable and non-polarizable electrodes, explain in detail. (6)

Or

2. (a) Draw the electrical equivalent circuit of a microelectrode and explain its electrical nature. (6)
- (b) Draw the equivalent circuit of a magneto strictive transducer at its resonance and explain its working. (6)

UNIT II

3. (a) With a neat block diagram explain the normal cardiovascular system. (6)
- (b) With the help of a functional block diagram explain the working principle of a typical electro cardiograph. (6)

Or

4. (a) What is a pacemaker? Explain its operation in detail. (6)
- (b) With a neat block diagram explain about the electro magnetic blood flow meter. (6)

UNIT III

5. (a) Explain in detail about the respiratory system. (6)
- (b) What are the methods available to measure respiration rate? Explain any one method in detail. (6)

Or

6. (a) Explain about different types of oximeters. (6)
- (b) Explain in detail about pulmonary function analyzers. (6)

UNIT IV

7. (a) With a neat block diagram explain a 3 channel frequency division multiplex telemetry system. (6)
- (b) Explain about intensive cardiac care unit. (6)

Or

8. (a) Explain in detail about implanted transmitters. (6)
- (b) Explain about let-go current and what are the rules to maintain a safe patient electrical environment. (6)

UNIT V

9. (a) What are the principal components of laser explain in detail. (6)
- (b) With a neat diagram explain the working of a computed tomography. (6)

Or

10. (a) Briefly explain about ultra sonography. (6)
- (b) Write a short note on cine Angiograms. (6)

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR — SECOND SEMESTER

Branch — Mechanical Engineering

AUTOMOBILE ENGINEERING

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each unit.

UNIT - I

1. Briefly explain the constructional details of Piston, connecting rod and crank shaft, with neat sketches.

Or

2. Explain the arrangement of combustion chambers for petrol and diesel engines with neat sketches.

UNIT - II

3. Explain briefly the functions and constructional details of fuel supply system with neat sketches.

Or

4. Explain the function of a carburetor and specify the types of carburetors with neat sketches.

UNIT - III

5. Explain the need of lubrication in automobile engines. Explain the types of lubrication systems.

Or

6. Explain briefly the properties of lubricants with suitable examples.

UNIT - IV

7. What is the need of propeller shaft in automobiles? Explain the constructional details.

Or

8. Explain briefly the function of a clutch in automobiles and also explain various types of clutch materials with examples.

UNIT - V

9. Explain briefly about power steering mechanism in automobiles, with suitable examples and sketches.

Or

10. Write a short notes on :

- (a) Brake shoes
 - (b) Wheel alignment
 - (c) Caster camber in steering
 - (d) Vehicle electrical system (Dynamo).
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(10 CS 11)

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR – SECOND SEMESTER

Branch – CSE

COMPUTER GRAPHICS

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT – I

1. What is scan converting lines? Write midpoint line algorithm for scan conversion of lines. (12)

Or

2. (a) Draw and explain the architecture of a raster display. (6)
(b) What is computer graphics? Explain the uses of computer graphics. (6)

UNIT – II

3. (a) Explain about simple raster display system. (6)
(b) Write the steps for transforming a world-coordinate window into a viewport. (6)

Or

4. How to transforming a set of points belonging to an object into another set of points, when both sets are in different coordinate system? (12)

UNIT – III

5. (a) Explain about perspective projections. (6)
(b) Explain about regularized Boolean set operations. (6)

Or

6. Explain about different coordinate systems and relationship between them. (12)

UNIT – IV

7. (a) Explain about RGB color model. (6)
(b) Explain about CIE color – matching functions. (6)

Or

8. Write and explain different algorithms for visible – line determination. (12)

[P.T.O]

UNIT - V

9. Explain the following :

- (a) Texture mapping (4)
- (b) Constant shading (4)
- (c) Ambient light. (4)

Or

10. (a) Explain about phong shading. (6)
- (b) What is interpolated shading? What are the problems in interpolated shading. (6)
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FOURTH YEAR — SECOND SEMESTER

Branch — Civil Engineering

DESIGN AND DRAWING OF IRRIGATION STRUCTURES

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

PART - A

1. A tank surplus work has the following details
- | | | |
|---|---|-----------|
| Combined catchment | = | 26 sq. km |
| Intercepted catchment | = | 20 sq. km |
| Full tank level | = | 12.0 m |
| Crest level of-weir | = | 12.00 m |
| M.W.L of tank | = | 12.75 m |
| Ground level | = | 11.00 m |
| Top of foundation concrete | = | 9.60 m |
| Ryves co-efficient for combined catchment | = | 9 |
| Ryves co-efficient for intercepted | = | 1.5 |
- Design and draw the sketch of surplus weir.

Or

2. For the given data, design the size 4 number of notches required for a canal drop and sketch the details
- | | | |
|-----------------------|---|----------|
| Full supply discharge | = | 4 cumces |
| Bed width | = | 6.0 m |
| F.S depth | = | 1.5 m |
| Half supply depth | = | 10 m |
- Assume any other data.

PART - B

3. Design the salient dimensions of a syphon well drop for the following particulars:
- | | | |
|------------------------------------|---|------------|
| Fall | = | 3.8 m |
| General ground level | = | + 163.36 m |
| Full supply depth | = | 75 cm |
| Bed level upstream | = | +162.83 |
| Discharge | = | 1 cumec |
| Bed width upstream and down stream | = | 2.4 m |

Or

[P.T.O]

Design a cross regulator for a distributory channel taking off from the parent channel, for the following data.

Discharge of parent channel	=	100 cumecs
Discharge of distributory	=	15 cumecs
FSL of parent channel	=	$\frac{U/S}{d/s} = \frac{208.10}{207.90}$
Bed width of parent channel	=	$\frac{U/S}{d/s} = \frac{42 \text{ m}}{38 \text{ m}}$
Full supply water depth in parent channel	=	$\frac{U/S}{d/s} = \frac{2.5 \text{ m}}{2.5 \text{ m}}$
FSL of distributory	=	207.10 m
Bed width of distributory	=	15 m
Full depth of water in distributory	=	1.5 m
Permissible Khoslas safe exit gradient	=	1/6.

(10 EC 45)

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR – SECOND SEMESTER

Branch – ECE

CELLULAR MOBILE COMMUNICATION

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each unit.

UNIT – I

1. (a) How a cellular telephone call is made? Explain.
(b) Write a clear notes on Analog and digital cellular systems.

Or

2. (a) What is frequency reuse? Explain with one suitable example.
(b) Write a note on Antennas at cell-site.

UNIT – II

3. (a) Explain free space propagation model. Also explain reflection and scattering.
(b) Write a notes on cell-site antenna heights and signal coverage cells.

Or

4. Explain the following :
 - (a) Long distance propagation
 - (b) Fading loss
 - (c) Mobile propagation.

UNIT – III

5. (a) What is meant by co-channel interference? Explain.
(b) Explain the design of Antenna system.

Or

6. Write a brief note types of non-channel interference. Also explain the interference between systems.

[P.T.O.]

UNIT - IV

7. (a) Explain how the switching can take place between channels.
(b) Define hand off and list out its characteristics.

Or

8. (a) How is frequency spectrum utilized? Explain.
(b) Write a clear note on location tracking in cellular mobile communication.

UNIT - V

9. (a) Why do we need multiple access schemes? Explain.
(b) Explain GSM architecture.

Or

10. (a) Write the comparison between TDMA and CDMA.
(b) What is GPRS? Explain its architecture.
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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016.

FOURTH YEAR — SECOND SEMESTER

Branch – EICE

ROBOTICS AND AUTOMATION

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT – I

1. (a) With a neat sketch describe the working of pneumatic actuator.
(b) Discuss the working principle of hydraulic drives with help of neat sketch.

Or

2. (a) Explain the performance characteristics of an industrial robot.
(b) Explain the control loops using voltage amplifiers.

UNIT –II

3. (a) Explain briefly about acoustic sensors in industrial robots.
(b) Explain about object recognition in robot system.

Or

4. (a) What is meant by segmentation? Explain various techniques of segmentation.
(b) Explain briefly about feature extraction in robots.

UNIT –III

5. (a) Discuss the design consideration of robotic gripper.
(b) Explain various types of End-effectors in Industrial robots.

Or

6. (a) Explain various types of grippers used in robots.
(b) Explain in brief about continuous path programme.

UNIT –IV

7. Define rotation transformation and explain how to represent the transformation for rotation of an angle ' θ ' about x , y and z axis.

Or

8. Explain the kinematic equations using homogeneous transformations.

UNIT -V

9. (a) What are the advantages and benefits of robot arc welding? Explain.
(b) What are the requirements of the robot for spray painting applications?

Or

10. (a) What are the capabilities and features of robots in spot welding? Explain.
(b) Explain briefly about industrial automation using robots.
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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR — SECOND SEMESTER

Branch – CSE

WEB TECHNOLOGIES

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT – I

1. (a) Discuss about HTTP protocol in detail.
- (b) Explain in detail about Basic Browser functions.

Or

2. (a) What is MIME? What is mean by MIME types of file? Which is the method that return the MIME type of file?
- (b) Discuss the overall structure of HTTP Request message.

UNIT – II

3. (a) Explain the following terms related to CSS :
 - (i) Font weight
 - (ii) Text decoration
 - (iii) Border style.
- (b) Explain the various ways you can reference a color in CSS.

Or

4. (a) What are the different types of lists in HTML? Explain how these lists are created in HTML with suitable example.
- (b) Discuss how a basic table is created using HTML.

UNIT – III

5. (a) Write a Java Script that reads an integer and determine and displays whether it is polyndrome or not.
- (b) Explain the use of Document object model in detail.

Or

6. (a) Describe the primitive data types that Java Script uses.
- (b) Explain how arrays can be used in Java script with suitable example.

UNIT - IV

7. (a) What is Session? Explain session tracking with suitable example.
- (b) Discuss the advantages of a SAX parser over the DOM parser.

Or

8. (a) What is name space? Describe how a names space is created with a relevant example.
- (b) Explain the Servlet Life Cycle in detail

UNIT - V

9. (a) Discuss about the MVC Basics in detail.
- (b) Explain how XML Documents displaying in browser.

Or

10. (a) Differentiate and explain JSP and Java Servlets.
- (b) Write an example JSP to illustrate a method declaration and usage.

(10 ME 45)

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016.

FOURTH YEAR — SECOND SEMESTER

Branch — Mechanical Engineering

ROBOTICS

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT - I

1. (a) Explain in brief about special resolution in robots.
(b) Explain the basic components of robotic systems.

Or

2. (a) Explain various types of robotic motions.
(b) Explain the term "Work Volume" in robots.

UNIT - II

3. (a) Differentiate between P.I and P.I.D controllers in robot control system.
(b) Distinguish between serro controlled and non-serro controlled robots.

Or

4. (a) Explain the proximity sensors with a neat sketch and their applications.
(b) Explain about open loop control system with neat sketch.

UNIT - III

5. (a) What is a Sensor? Explain various types of robotic sensors.
(b) Discuss the types of forces to be considered in designing grippers of a robot.

Or

6. (a) Write a short notes on : (i) Trajectory planning and (ii) Robot controller.
(b) Write a short note on cubic polynomial in controlling robot.

[P.T.O]

UNIT - IV

7. Explain briefly about 2R and 3R robot manipulators, with suitable examples.

Or

8. Explain the kinematic equations using homogeneous transformations with example.

UNIT - V

9. What is robot programming? Explain in brief the types of programming in industrial robots.

Or

10. What are the capabilities and features of robots in spot welding? Explain.
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(10 CE 52)

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR — SECOND SEMESTER

Branch — Civil Engineering

ADVANCED FOUNDATION ENGINEERING

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT - I

1. Explain Water Table fluctuation in design of Foundations.

Or

2. Write about foundations in clays and sands?

UNIT - II

3. Classify the footings and explain the factors effecting the depth of the footing.

Or

4. (a) How would you determine the contact pressure for a footing subjected to loads placed eccentrically?
(b) Compute the ultimate load that an eccentrically loaded square footing of width 2.1m with an eccentricity of 0.35 m can take at a depth of 0.5 m in a soil $r = 18 \text{ kN/m}^3$; $c = 9 \text{ kN/m}^2$ $\phi = 0$ $NC = 52$, $Nq = 35$, $Nr = 42$.

UNIT - III

5. Explain different types of Mat foundations with help of neat sketches.

Or

6. Determine the Net ultimate bearing capacity of mat foundation with following characteristics.

(a) $Cu = 120 \text{ kN/m}^2$, $\phi = 0$, $B = 8 \text{ m}$, $L = 18 \text{ m}$, $Dj = 3 \text{ m}$

(b) $Cu = 2500 \text{ lb/ft}^2$, $\phi = 0$, $B = 20 \text{ ft}$, $L = 30 \text{ ft}$, $Dj = 6.2 \text{ ft}$

[P.T.O]

UNIT - IV

7. (a) Discuss the settlement of a pile group in a sand with the help of settlement of an individual test pile data.
- (b) Discuss the settlement of pile groups in cohesive soils.

Or

8. Explain the group capacity of piles.

UNIT - V

9. Classify the settlement and explain the settlement of foundation on cohesionless soils.

Or

10. Estimate the immediate settlement of a concrete footing $1\text{m} \times 2\text{m}$ size founded at a depth 1m in a soil with $E = 10^4 \text{ kN/mL}$ $\mu = 0.3$. The footing is subjected to a pressure of 200 kN/m^2 . Assume the footing to be rigid.

(10EC25)

FOUR YEAR B.TECH DEGREE EXAMINATIONS APRIL 2016

FOURTH YEAR SECOND SEMESTER

Branch: ECE

EMBEDDED SYSTEMS

Time: 3 Hours

Max.Marks: 60

Answer ONE Question from each unit

UNIT-I

1. Discuss the design challenges of an embedded system?
OR
2. Explain typical characteristics of an embedded system?

UNIT-II

3. Explain message passing mechanisms in an embedded system?
OR
4. Explain how exception handling is carried in an embedded system

UNIT-III

5. What is hardware software code sign? Explain fundamental issues in code sign?
OR
6. What is operational quality attribute? Explain why non operational quality attributes to be considered in embedded system design?

UNIT-IV

7. Explain any two hardware partitioning algorithms?
OR
8. Write notes on simulator and emulator

UNIT-V

9. Write notes on
 - a. Watch dog timer
 - b. reconfigurable processors
 - c. System on chip

OR

10. Explain architecture of device drivers?

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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR—SECOND SEMESTER

Branch - EEE

HIGH VOLTAGE DIRECT CURRENT TRANSMISSION

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT - I

1. (a) For a fixed power of transmission explain how the economic choice of voltage level is selected in DC transmission system.
(b) Explain the technological development in control and protection, for better performance and reliability of DC transmission system.

Or

2. (a) Discuss about the recent trends in DC transmission.
(b) Discuss the different factors that favour HVDC transmission systems over EHV transmission over long distances.

UNIT - II

3. Explain the individual characteristics of rectifier and an inverter with sketches.

Or

4. Draw the schematic circuit diagram of a 6-pulse Greutz's circuit and explain its principle of operation.

UNIT - III

5. (a) Discuss about constant extinction angle control in HVDC link.
(b) Discuss about alternate reactive power control strategies in HVDC link.

Or

6. (a) Explain the actual control characteristics of HVDC converters.
(b) Constant-minimum-ignition-angle control.

UNIT - IV

7. (a) State and explain why H.V.D.C. circuit breakers are not necessary in main poles of H.V.D.C. system.
(b) Sketch a complete single line diagram of DC side of HVDC substation and indicate various surge arresters.

Or

8. (a) Discuss about the basic principles of protection against over voltages.
(b) Explain the necessity of smoothing reactor in a dc line.

UNIT - V

9. (a) Mention the configurations and impedance characteristics of various types of AC filters.
(b) Explain in detail the design aspects of single tuned filter.

Or

10. Discuss the design aspects of single tuned filter and obtain the expression for optimum value of Q for minimum harmonic voltage.
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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR – SECOND SEMESTER

Branch – Mechanical Engineering

FINITE ELEMENTS METHOD

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT – I

1. Explain briefly about the following semi-automatic mesh generation techniques.
 - (a) Conformal mapping approach
 - (b) Mapped element approach.

Or

2. Give the necessity of rotating and off setting the work plane in ANSYS environment. What are the useful features of CAEFEM package in analysis.

UNIT – II

3. Explain briefly about the following :
 - (a) Variational method
 - (b) Importance of Boundary conditions.

Or

4. Write notes on the following
 - (a) Weighted Residual Method
 - (b) Initial and Boundary Value problems.

UNIT – III

5. (a) What is the requirement of displacement field to be satisfied for use in the Rayleigh – Ritz method.
(b) Explain in brief the Principle of Stationary Total Potential (PSTP).

Or

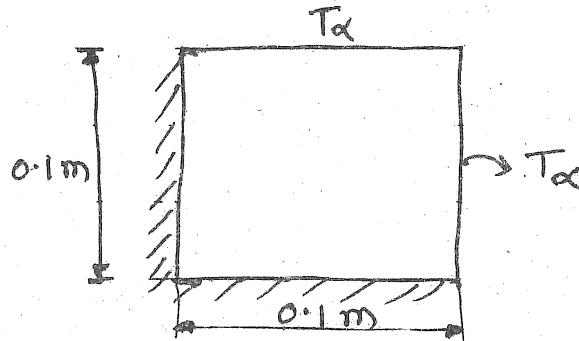
6. Show that the central deflection of the beam of Length 'L' m (both the ends are fixed) carries a load of 'P' at the center is given by $\frac{PL^3}{192EI}$ using FEM by dividing the beam into two elements.

UNIT - IV

7. Derive the elemental mass matrix for 1 - D bar element and 1 - D plane truss element.

Or

8. Find the temperature distribution in the square plate as shown in figure below. Assume $K = 30 \text{ W/m}$, $T_a = 50^\circ\text{C}$, $q = 100 \text{ W/m}^3$.



UNIT - V

9. Derive strain displacement [B] matrix for a 3 noded triangular element.

Or

10. Derive the procedure of obtaining stiffness matrix by properly choosing shape functions for tetrahedron element.

(10 EE 27)

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR — SECOND SEMESTER

Branch — EEE

POWER SYSTEM OPERATION CONTROL

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT - I

1. Distinguish between incremental fuel cost and incremental production cost for a thermal power plant.

Or

2. Describe the objective function to minimize the cost of generation of hydro thermal scheduling.

UNIT - II

3. Write about the elementary treatment of optimal power flow with an without constraints.

Or

4. Obtain the condition for optimum operation of a power system with 'n' plants when losses are considered.

UNIT - III

5. How do the governor characteristics of the prime mover affect the control of system frequency and system load?

Or

6. Draw the block diagram of propositional plus integral controller and show the steady state frequency is zero.

UNIT - IV

7. Draw the block diagram of a simplified automatic voltage regular and explain.

Or

8. Write a short notes on : (a) excitation system stabilizer (b) automatic excitation generation control with system.

[P.T.O]

UNIT - V

9. (a) Write a note on reactive power flow control on a line.
(b) What are problems associated with in the voltage stability in a power system?

Or

10. Why voltage is more sensitive against reactive power than active power?
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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR – SECOND SEMESTER

Branch — Civil Engineering

MANAGERIAL ECONOMICS AND ACCOUNTANCY

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT – I

1. (a) Define Law of demand. What are its exceptions? Explain.
(b) Define the concept of Economics. Illustrate how it helps in solving managerial problems.

Or

2. (a) Briefly discuss about consumer's equilibrium.
(b) Define elasticity of demand. Explain its significance. Illustrate.

UNIT – II

3. (a) Define production function. How can a producer find it useful? Illustrate.
(b) Explain the laws of returns with appropriate examples.

Or

4. (a) State the assumptions in BEA. Explain how BEA is used by the manager's in their day to day operations.
(b) Explain the applications of BEA.

UNIT – III

5. What is perfect competition? How is market price determined under conditions of perfect competition?

Or

6. Define markets. Elaborate how differently markets are classified.

UNIT – IV

7. Explain the features of joint stock company's. What are its advantages and disadvantages?

Or

8. Explain the features of partnership company. What are its advantages and disadvantages?

UNIT - V

9. (a) Explain the methods of capital budgeting.
(b) Explain the working capital cycle.

Or

10. Discuss briefly about.
(a) Trading Account
(b) Profit and Loss Account
(c) Balance Sheet.
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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR – SECOND SEMESTER

Branch – ECE

VLSI DESIGN

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT – I

1. (a) Discuss the microelectronics field evolution. List the different steps involved in IC manufacturing process.
- (b) For nMOS inverter driven by another nMOS inverter, derive the expression for $\frac{Z_{p.u.}}{Z_{p.d.}}$ ratio.

Or

2. (a) A n-channel MOSFET with $t_{ox} = 20\text{nm}$, $\mu_n = 650 \text{ cm}^2/\text{V-S}$, $V_t = 0.8\text{V}$ and $\frac{W}{L} = 10$. Find the transconductance (gm) when $V_{gs} = 2\text{V}$ and $V_{ds} = 1.2\text{V}$. ($\epsilon_0 = 8.854 \times 10^{-12}$).
- (b) Explain how the BiCMOS inverter performance can be improved.

UNIT – II

3. (a) Write a notes on :
 - (i) Sheet resistance
 - (ii) Area capacitance
 - (iii) Writing capacitances.
- (b) Discuss 2 μm CMOS design rules for wires.

Or

4. (a) Draw the stick diagram and layout diagram for CMOS logic $V = \overline{(A + B + C)}$.
- (b) Explain about difficulties arising due to scaling.

UNIT – III

5. (a) Enumerate the steps of designing complex boolean functions using CMOS logic.
- (b) Write a notes on Gate logic.

Or

6. (a) What is meant by Floor-Planning? Explain.
(b) How can power delay estimated? Explain.

UNIT - IV

7. (a) Explain the array multiplication technique with array multiplication cell.
(b) Explain synchronous and asynchronous counter structures.

Or

8. (a) Explain about the principle and operation of FPGAs. What are its applications.
(b) Explain about the following :
(i) Channeled gate array
(ii) Chanelless gate array
(iii) Structured gate array.

UNIT - V

9. (a) Explain different modelling styles in VHDL.
(b) Write the VHDL code for 4×16 decoder.

Or

10. (a) Explain the tests performed at various levels for detecting Malfunctioning of a chip?
(b) Explain about BIST pertaining to VLSI testing.

(10 CS 09)

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2016

FOURTH YEAR – SECOND SEMESTER

Branch – CSE

ARTIFICIAL INTELLIGENCE NEURAL NETWORKS

Time : 3 Hours

Max. Marks : 60

Answer ONE question from each Unit.

UNIT - I

1. (a) What is artificial intelligence? Explain the foundation of AI in computer engineering. (6)
- (b) Explain about the properties of task environment. (6)

Or

2. Explain about how to define the problem and how to formulating the problem. (12)

UNIT - II

3. (a) What is uniformed search? Explain the implementation to Depth-first search? (6)
- (b) What is heuristic search? Explain best-first search strategy. (6)

Or

4. (a) Explain about Alpha-Beta pruning. (6)
- (b) Explain the use of cutting off search in Alpha-Beta search. (6)

UNIT - III

5. (a) Write and explain forward chaining algorithm with example. (6)
- (b) What is sensors? Explain about different types of sensors of agents in the Wumpus world. (6)

Or

6. (a) What is Neuron? Explain about McCulloch-Pitts model. (6)
- (b) Explain the operation of a biological neural network. (6)

UNIT - IV

7. (a) Explain about different Learning laws. (6)
- (b) Explain the pattern recognition tasks of feed forward Neural Networks. (6)

Or

8. (a) What is the significance of Widrow's law in Linear associative network? (6)
- (b) Explain Rosenblatt's perceptron model of a neuron. (6)

[P.T.O.]

UNIT - V

9. (a) Explain about Hop field model of a neural network. (6)
(b) Explain the operation of a stochastic network. (6)

Or

10. (a) Explain about self – organizing feature map learning. (6)
(b) Explain about instar network. (6)
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