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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

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. (a) Explain the semi automatic mesh generation technique.

   (b) List any three finite element analysis software and explain their capabilities.

Or

2. With an example, explain the procedure involved in solving an engineering problem in computational finite element analysis using computer software.

UNIT – II

3. Derive the finite element equations from the one dimensional second order equation by variational approach.

Or

4. Explain the methodology for the treatment of all three boundary conditions in a 1-D neat transfer element.

UNIT – III

5. Calculate the deflection at the centre of the beam as shown in figure 1. Take E = 220 Gpa; A = 40 × 40 mm.

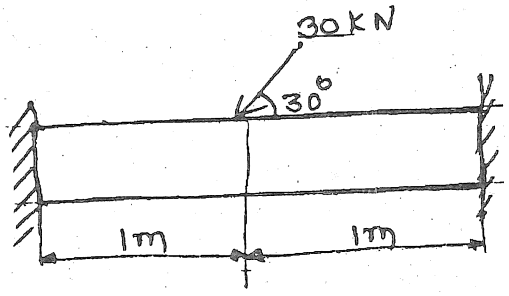

Figure. 1

Or

[P.T.O]

6. A cantelever beam is loaded with point load at the end and uniformly distributed load throughout the beam of length 'L' m. Explain how will you proceed with the solution using FEM?

UNIT – IV

7. Define and derive Hermite-shape functions for a two noded beam element.

Or

8. What are shape functions? Show that the shape functions at node $i(N_i)$, for the simplex triangle is one and zero at nodes j and k.

UNIT – V

9. (a) Using three point Gaussian quadrature find $\int xy\,dA$ for a triangular element whose vertices are (1, 1), (3, 2) and (2, 3).

   (b) Find the shape functions of a quadrilateral element in natural coordinates.

Or

10. Derive one dimensional steady state heat conduction equation and apply to one-dimensional fin problem.

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

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. Design and draw a neat sketch of a surplus weir with the following data.
   (a) Combined catchment = 26 sq.km
   (b) Intercepted attachment = 20 sq.km
   (c) Full talk level = +6.70 m
   (d) Maximum water level = +7.50 m
   (e) Ground level = +5.80 m
   (f) Foundation level = +4.20 m
   (g) Tank bund level = +8.90 m
   (h) Top width of bund = 1.8 m
   (i) Slope on other side of bound = 2:1
   Downstream level is +4.80 in a distance of 8.0 m.

Or

2. For the given data, design and sketch a tank sluice.
   Discharge = 0.25 m^3/sec
   Sill level of sluice = +20.00 m
   Top of bank = +56.00 m
   Assumed head of discharge = 0.3 m
   Side slopes of banks in front 4 rear = 1.5:1.

PART – B

3. Design and sketch a head regulator for a channel which takes off from the parent channel with the following data :
   Discharge of parent channel = 140 cumces
   Discharge of distributory = 15 cumces
   FSL of parent channel u/s = 210.0 m
   FSL of parent channel, d/s = 209.8 m

Bed width of parent channel u/s = 52 m

Bed width of parent channel d/s = 46 m

Depth of water in the parent channel d/s and u/s = 2.5 m

FSL of distributory = 209.1 m

Silt factor = 0.8 m

Assume sate exit gradient = 1/5

Or

4. Design and sketch a syphon aqueduct for the following data :

Discharge of canal = 40 cumecs

Bed width of canal = 30 m

Full supply depth of canal = 1.6 m

Bed level of canal = 206.4 m

Side slopes of canal = 1.5 H : 1 V

High flood discharge of drainage = 450 cumecs

High flood level drainage = 207.0 m

Bed level drainage = 204.5 m

General ground level = 206.5 m.

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

FOURTH YEAR — SECOND SEMESTER

Branch – EEE

HIGH VOLTAGE ENGINEERING

Time : 3 Hours *Max. Marks : 60*

Answer ONE question from each Unit.

UNIT – I

1. Explain with neat diagram, the principle of operation of
   (a) Series
   (b) Parallel resonant circuits for generating high ac voltages. Compare their performance.

Or

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

UNIT – II

3. With neat sketch explain the sphere gap measurements for peak voltage measurement.

Or

4. Explain the principle and construction of an electro static voltmeter for very high voltages.

UNIT – III

5. Explain various tests carried out in a circuit breaker at HV labs.

Or

6. Explain the method of impulse testing of high voltage transformers. What is the procedure adopted for locating the failure.

UNIT – IV

7. (a) What are partial discharges? Differentiate between internal and external dischargers.
   (b) Write short note on the measuring impedance circuit for the estimation of partial discharges.

Or

8. Draw a neat diagram of High voltage schering Bridge and analyse it for balanced condition. Draw its phasor diagram. Assume
   (a) Series equivalent
   (b) Parallel equivalent representation of the insulating material.

UNIT – V

9. (a) What is Pachen's law? How do you account for the minimum voltage for breakdown under a given p × d condition?

   (b) Describe various factors that influence break down in a gas.

Or

10. Explain thermal breakdown in solid dielectrics. How this mechanism is more significant flow other mechanisms.

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

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) Explain the operation of cellular systems.

   (b) Find out desired C/I from a normal case in an omni – directional antenna system.

Or

2. Explain the following

   (a) Cell Splitting

   (b) Mobile Antennas

   (c) Mobile Antennas characteristics.

UNIT – II

3. (a) Explain how obtaining the mobile point – to – point model.

   (b) List out point – to – point prediction model characteristics.

Or

4. (a) Explain how propagation is done over water and flat open area.

   (b) Write a brief note on "foiling loss".

UNIT – III

5. What is meant by co-channel interference? Explain and how co-channel interference can be measured.

Or

6. (a) What is meant by Diversity. Explain any two diversity techniques.

   (b) Explain the design of Antenna system.

UNIT – IV

7. (a) With a neat sketch explain the concept "Handoff".

   (b) List out the characteristics of "Handoff".

Or

8. Explain the following

   (a) Location tracking in cellular mobile communication.

   (b) Can setup in cellular mobile communication.

UNIT – V

9. (a) What is the need for digital mobile telephony? Explain.

   (b) Write the comparison between TDMA and CDMA.

Or

10. Explain the following

   (a) GSM Architecture.

   (b) GPRS Architecture.

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

FOURTH YEAR / SECOND SEMESTER

Branch – Mechanical Engineering

AUTOMOBILE ENGINEERING

Time : 3 Hours *Max. Marks : 60*

Answer ONE question from each Unit.

UNIT – I

1. (a) Explain briefly the classification of I.C. Engines.

   (b) Explain briefly the combustion phenomemon in I.C. Engines.

Or

2. What is the purpose of Liners in I.C. engines and explain the types of Liners with neat sketches.

UNIT – II

3. Explain briefly the functions, construction and working principle of air cleaners with neat sketch.

Or

4. What is a carburetor? Explain in brief the types of carburetors with neat sketches.

UNIT – III

5. Why cooling systems are needed for I.C. Engines? Explain the types of cooling systems with neat sketches.

Or

6. Explain the purpose of lubrication in engines and also explain the types of lubrication systems with sketches.

UNIT – IV

7. Explain the difference between brake and clutch. Explain in brief various types of clutches with neat sketches.

Or

8. What is a gear box in automobiles? Explain the constructional details of automatic gear box with a neat sketch.

UNIT – V

9. What are the types of suspension systems in automobiles, with neat sketches?

Or

10. Explain briefly the types of brakes in automobiles, with suitable examples and sketches.

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

FOURTH YEAR/ SECOND SEMESTER

Branch – CSE

COMPUTER GRAPHICS

Time : 3 Hours *Max. Marks : 60*

Answer ONE question from each Unit.

UNIT – I

1. (a) What is scan converting lines? Write basic incremental algorithm for scan conversion of lines. (6)

   (b) Explain about conceptual framework for interactive graphics. (6)

Or

2. (a) Explain about event – driven loop. (6)

   (b) Explain about the development of hardware and software for computer graphics. (6)

UNIT – II

3. (a) Explain about Random – Scan display system. (6)

   (b) What is scaling? Explain about uniform scaling and differential scaling. (6)

Or

4. Explain about composition of 3D transformations? (12)

UNIT – III

5. (a) Explain about parallel projections. (6)

   (b) Explain about 3D screen coordinate system. (6)

Or

6. (a) Define sweep. Explain about different sweep representations. (6)

   (b) Explain about binary space – partitioning trees. (6)

UNIT – IV

7. (a) Explain about HSV color model. (6)

   (b) Explain about dithering. (6)

Or

8. Write about explain the z – buffer algorithm. (12)

[P.T.O.]

UNIT – V

9. Explain the following :

   (a) Animation. (4)

   (b) Ambient light. (4)

   (c) Phong shading. (4)

Or

10. (a) Explain about texture mapping. (6)

    (b) Explain about ploygon mesh shading. (6)

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

FOURTH YEAR / SECOND SEMESTER

Branch — ECE

VLSI DESIGN

Time : 3 Hours *Max. Marks : 60*

Answer ONE question from each Unit.

UNIT – I

1. (a) With neat sketches explain in detail all the steps involved in electron lithography process.

   (b) What is the purpose of metalization in IC manufacturing? Explain the methods employed for metalization.

Or

2. (a) Derive the relation between I_{DS} and V_{ds} of MOSFET.

   (b) A PMOS transistor is operated in the triode region with the following parameters $V_{gs} = -4.5$ V, $V_{tp} = -1$V, $V_{ds} = -2.2$V, W/L = 95, $\mu_p C_{ox} = 95$ μA/v^2. Find its drain current and drain to source resistance.

UNIT – II

3. (a) What is a stick diagram and explain different symbols used for components in stick diagram.

   (b) Describe briefly the process of VLSI design flow.

Or

4. (a) Draw the stick diagram and layout diagram for CMOS inverter.

   (b) Discuss λ-based design rules.

UNIT – III

5. (a) Explain about alternate gate logic.

   (b) Write notes on clock and power routing.

Or

6. Explain the following :

   (a) Floor – planning

   (b) Placement

   (c) Routing.

[P.T.O]

UNIT – IV

7. (a) Draw the circuit diagram for 4×4 barrel shifter and explain its shifting operation.

   (b) Explain about the design of ALU subsystem.

Or

8. (a) Explain the design approach for Fuu-custom and Semi-custom devices.

   (b) Write the comparison between CPLD and FPGA.

UNIT – V

9. (a) Write the VHDL code for 16 × 4 encoder.

   (b) Explain the following :

   (i) Design capture tools

   (ii) Design verification tools.

Or

10. (a) Explain about different fault models in VLSI testing with examples.

    (b) Explain layout design for improved testability.

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

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 Neuroscience. (6)

   (b) Explain about PEAS. (6)

Or

2. What is agent program? Explain about different kinds of agent programs. (12)

UNIT – II

3. (a) What is blind search? Explain how to implement Breadth-first search. (6)

   (b) Explain how to minimizing the total estimated solution cost by using A* search. (6)

Or

4. (a) Explain about minimax algorithm. (6)

   (b) Explain about evaluation functions. (6)

UNIT – III

5. (a) What is inference? Explain about inference rules. (6)

   (b) Write and explain forward chaining algorithm with example. (6)

Or

6. (a) Explain about the structures of artificial neural networks. (6)

   (b) What is neuron? Explain the operation of a biological neural network. (6)

UNIT – IV

7. (a) Explain about different types of artificial neural networks. (6)

   (b) How to determine the weights by computation in linear associative network. (6)

Or

8. (a) What is the significance of Hebb's law in linear associative network? (6)

   (b) Explain about back propagation learning. (6)

UNIT – V

9. (a) Explain about continuous Hop field model. (6)

(b) Explain about Boltzmann machine. (6)

Or

10. Explain the components of a competitive learning network. (12)

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FOUR YEAR B.TECH DEGREE EXAMINATIONS APRIL 2015

SECOND SEMESTER

BRANCH : EEE

PAPER : POWER SYSTEM OPERATION & CONTROL

Time: 3 Hours Max. Marks: 60

ANSWER ONE QUESTION FROM EACH UNIT

UNIT-I

1. The fuel cost functions in RS/ hr for three thermal plants are given by $C_1 = 400 + 8.4P_1 + 0.006P_1^2$ $100 \leq P_1 \leq 600$, $C_2 = 650 + 6.78\,P_2 + 0.004\,P_2^2$, $300 \leq P_3 \leq 650$ where P_1 ,P_2 are in MW neglecting line losses and including general limits S, determine the optimal generation scheduling where $P_D = 1550\ M_w$.

OR

2. 150 MW, 220 MW and 220MW are the ratings of three units located in a thermal power station. Their respective incremental costs are given by the following equations.

$\frac{dC_1}{dP_1} = \text{Rs}\,(0.11P_1 + 12)$, $\frac{dC_3}{dP_3} = \text{Rs}\,(0.1P_3 + 13)$; $\frac{dC_2}{dP_2} = \text{Rs}\,(0.95P_2 + 14),)$ where P_1, P_2 and P_3 are the loads in MW. Determine the economical load allocation between the three units when the total load on the station is (a) 350 MW (b) 500 MW

UNIT-II

3. With the help of a flow chart, explain the dynamic programming method in unit commitment.

OR

4. (a) Explain the priority list method for unit commitment problem.
   (b) Define (i) Minimum up time
   (ii) Minimum down time
   (iii) Spinning reserve

UNIT-III

5. Derive the transfer function of an uncontrolled load frequency control of a single area system and derive the expression for static error following a step load change

OR

6. Draw and explain the basic P – f and Q- V control loops.

[p.t.o.]

UNIT-IV

7. With the help of block diagram discuss two types of excitation systems.

OR

8. Explain the operation of static VAR compensator and state its advantages over other methods of voltage control.

UNIT-V

9. (a) What is voltage instability? Explain the phenomenon of voltage collapse with relevant Pv and Qv diagram.

   (b) Explain how transformers are used to control the flow of rean and reactive power to power system network. Also discuss advantages and disadvantages of series compensation.

OR

10. Explain clearly what do mean by compensation of line and discuss briefly different methods of compensation.

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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

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. (a) Explain displaced soil effect on design of foundation.

   (b) Briefly explain about how depth and spacing consider in design of foundation.

Or

2. What are the environmental considerations for the design of foundation?

UNIT – II

3. Design a reinforced cement concrete footing for a 1m wide concrete wall carrying a load of 800 kN/m. The allowable soil pressure is 200 kN/m^2.

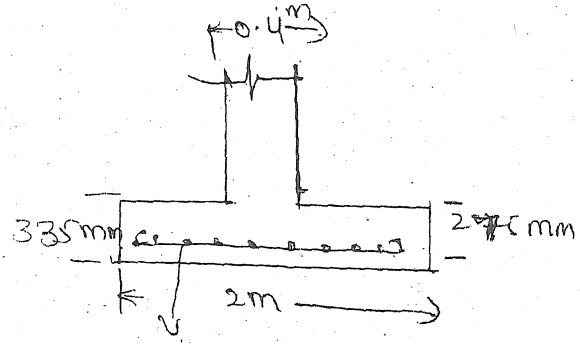
Or

4. Design a square reinforced concrete footing for the following data.

   Column load = 800 kN

   Allowable soil pressure = 200 kN/m^2

   Size of column = 0.4 m × 0.4 m.



10mm ϕ Bar 49 No's both ways

UNIT – III

5. A mat foundation on a saturated clay soil has dimensions of 20m × 20m. Given dead and live load 48 MN, C4 = 30 kN/m^2 relay = 18.5 kN/m^3.

   (a) Find the depth, D_f of the mat for a fully compensated foundation.

   (b) What will be the depth of the mat (D_f) for a factor of safety of 2 against bearing capacity failure?

Or

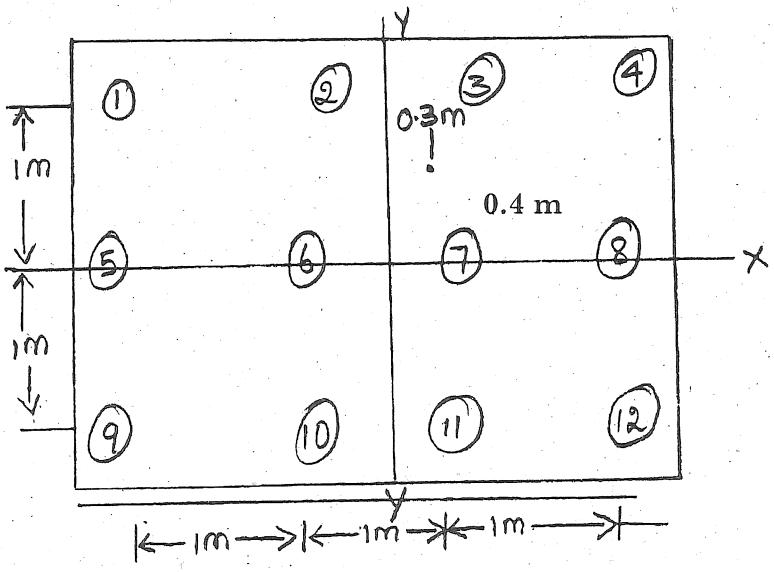
6. From the plate load test (1 ft × 1 ft) in the field the coefficient of the subgrade reaction of a sandy soil was determined to be 80, lb/m^3.

   (a) What will be the value of coefficient of subgrade reaction on the same soil for a foundation with dimensions of 30 ft × 30 ft?

   (b) If the fully sized foundation has dimension of 45 ft × 30 ft, what will be the value of the coefficient of subgrade reaction?

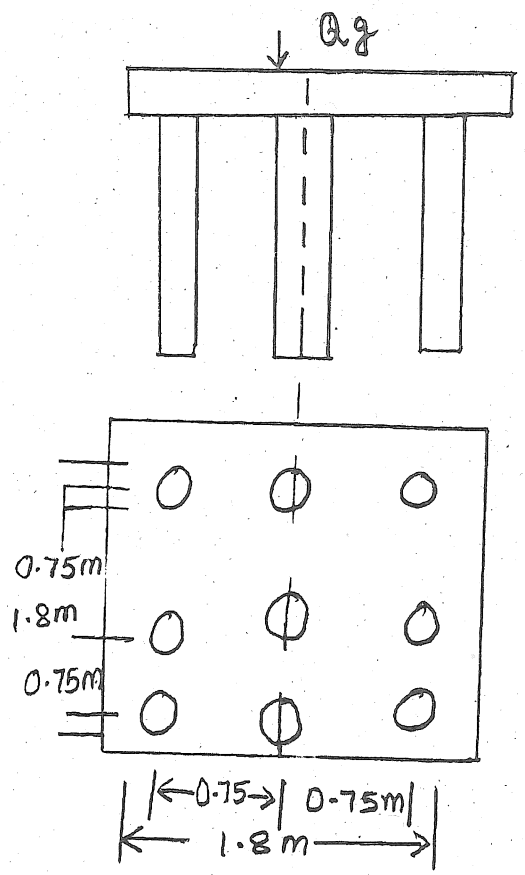
UNIT – IV

7. A pile group consisting of 12 piles is subjected to a total load of 4 MN, with eccentricity $e_x = 0.3m$ $e_y = 0.4m$. Determine the maximum load in an individual pile.



Or

8. A pile group consists of a friction piles of 30 cm diameter and 10 m length driven in clay (C_u = 100 kN/m^2, r = 20 kN/m^3) as shown in fig. Determine safe load for groups (fs = 3, ∞ = 0.6).



UNIT – V

9. Explain the consolidation settlement and secondary settlement.

Or

10. A square footing is required to carry a net load of 1200 kN. Determine the size of the footing if the depth of foundation is 2m and the tolerable settlement is 40 mm. The soil is sandy with N = 12. Take factor of safety of 3.0 and the water table is very deep.

FOUR YEAR B.TECH DEGREE EXAMINATION, APRIL 2015

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) What are the advantages of HVDC power transmission for bulk powers over EHVAC transmission.

   (b) What are the principal applications of DC transmission?

Or

2. (a) For a fixed power transmission explain how the economic choice of voltage level is selected in DC transmission systems.

   (b) Explain the technological development in control and protection, for better performance and reliability for DC transmission systems.

UNIT – II

3. (a) Draw schematic of any four different converters that can be adopted for a 3-phase six pulse dc conversion system.

   (b) For a 3-phase bridge circuit, the secondary line voltage is 400 kv rms with a reactance per phase of 40 ohms. Find the dc output voltage and the communication over lap angle if the O/P current is 2000A. Assume the delay angle to be 15°.

Or

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

UNIT – III

5. (a) Derive the mathematical model of converter control and d.c. network of a HVDC link.

   (b) Explain the process of energizing and de-energizing a dc link.

Or

6. (a) Explain the actual control characteristics of HVDC converters.

(b) Constant-Minimum-Ignition-Angle control.

UNIT – IV

7. (a) Explain the difference between A.C. Circuit breaker and H.V.D.C. circuit breaker.

(b) State the principle of artificial current zero employed in H.V.D.C. circuit breakers.

Or

8. (a) What are the basic principles of over current protection?

(b) Discuss the various faults exist in converter station? Explain.

UNIT – V

9. Discuss about various types of Ac filters and explain in detail the design aspects of a high pass filter.

Or

10. Discuss the design aspects of a single tuned filter and obtain the expression for optimum value of Q for minimum harmonic voltage.

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

FOURTH YEAR/SECOND SEMESTER

Branch — ECE

SATELLITE COMMUNICATIONS

Time : 3 Hours *Max. Marks : 60*

Answer ONE question from each Unit.

UNIT – I

1. (a) Explain the origin of satellite communications.

   (b) Write a note on current state of satellite communications.

Or

2. (a) What are orbital perturbation? Explain the effects of earth's oblateness on orbital inclination of geosynchronous satellite.

   (b) Explain about launches and launch vehicles.

UNIT – II

3. (a) Discuss in detail about communication subsystems.

   (b) Write a note on GPS receivers.

Or

4. Explain the following :

   (a) Spacecraft subsystems

   (b) Attitude and orbit control system.

UNIT – III

5. (a) Why uplink frequency is different from down link frequency in SC? Discuss.

   (b) For a satellite earth station received, working on 6 GHz, the various gain and equivalent noise temperature are $T_{in} = 50^\circ K$, $T_{RF} = 50^\circ K$, $T_m = 300^\circ K$ and $T_{IF} = 1000^\circ K$, $G_{RF} = 23$ dB, $G_m = 0$ dB and $G_{IF} = 30$ dB. Calculate the system noise temperature.

Or

6. Explain the following :

   (a) Design of up-link.

   (b) Design of down-link.

UNIT – IV

7. (a) With a neat diagram explain about FDHA.

   (b) What is the required satellite bandwidth? Explain.

Or

8. Write a clear notes on :

   (a) FDMA

   (b) TDMA

   (c) CDMA

UNIT – V

9. (a) Explain how large antennas can be designed on earth station.

   (b) Write a notes on different types of antenna mounts.

Or

10. Write a brief notes on tracking small earth station antennas equipment for earth station.

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FOUR YEAR B.TECH DEGREE EXAMINATIONS APRIL 2015

SECOND SEMESTER

BRANCH : CIVIL ENGINEERING

PAPER : ENVIRONMENTAL POLLUTION AND CONTROL

Time: 3 Hours Max. Marks: 60

ANSWER ONE QUESTION FROM EACH UNIT

UNIT-I

1. Explain in detail about Air Pollution and its effects on living things.

OR

2. Write about water pollution and its effects.

UNIT-II

3. Write a short note on the following the working of the following pollution control devices. (a) Fabric collectors (b) Dry Systems

OR

4. Write about various meteorological factors that influence air pollution in detail.

UNIT-III

5. Explain the methods for removal of suspended and dissolved imparities in the control of water pollution?

OR

6. Write about biological process for removal of phosphorous and nitrogen in water pollution control.

UNIT-IV

7. Explain the following (a) Sanitary land filling method
(b) Disposal of Hazardous wastes.

OR

8. Explain in detail about the quantities and Chmoteristions of municipal solid wastes in solid waste management.

UNIT-IV

9. Write about the legislation conserving water pollution, air pollution and hazards wastes.

OR

10. Explain in detail about the methods adapted for treating effluents from comment industries, paper and pulp industries.

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FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

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 briefly the basic components of an industrial robotic system.
   (b) Describe in detail about SCARA robot.

Or

2. (a) Explain briefly the specification characteristics of a robot.
   (b) Write a short notes on repeatability.

UNIT – II

3. (a) Explain in brief about open loop and closed loop control systems of robots.
   (b) Distinguish between serro controlled and non-serro controlled robots.

Or

4. (a) Explain the importance of hydraulic drives with a neat sketch.
   (b) Explain about PID controllers.

UNIT – III

5. (a) Explain various types of grippers used in industrial robots.
   (b) Discuss the design consideration of robotic gripper.

Or

6. (a) Explain briefly about tactile sensors in robots.
   (b) How is a robot end-effector specified? Explain in detail.

UNIT – IV

7. (a) Explain briefly about robot kinematics.
   (b) Explain briefly about H.T of robot coordinate system.

Or

8. Explain in brief about D-H matrix and derive it with neat sketch.

UNIT – V

9. (a) Explain briefly the classification of industrial robots with examples.

   (b) Explain how robots are useful in nuclear and chemical plants.

Or

10. Explain the importance of robot programming and explain the types of programming with suitable examples.

FOUR YEAR B.Tech. DEGREE EXAMINATION, APRIL 2015

FOURTH YEAR – SECOND SEMESTER

Branch — CSE

WEB TECHNOLOGIES

Time : 3 Hours *Max. Marks : 60*

Answer ONE question from each unit.

UNIT – I

1. (a) Explain about HTTP response message in detail.

   (b) Discuss briefly about the TCP/IP, UDP protocols.

Or

2. (a) Define MIME. Explain the MIME types of file.

   (b) Discuss in detail about Higher-level protocols.

UNIT – II

3. (a) What are the benefits of using styles compared with placing formatting directly into the text of the webpage?

   (b) Describe the different ways that styles can be added to a page.

Or

4. (a) Discuss in detail about web server features.

   (b) What is frame? What is the advantage of frame? Explain the creation of frames with an example.

UNIT – III

5. (a) Discuss the way of using operators in Java Script with examples.

   (b) Describe the intrinsic event handling of document object model.

Or

6. (a) Explain about CSS box model in detail.

   (b) Write a Javascript that reads an integer and determines and display whether it is prime or not.

UNIT – IV

7. (a) Discuss about DOM event handling in detail.

   (b) Write a servlet to display current date and time.

Or

8. (a) What is produced by the SAX parser? And discuss the advantages of SAX parser.

   (b) Discuss about the XML documents and vocabularies in detail.

UNIT – V

9. (a) Explain JSP elements in detail.

(b) Discuss briefly about the following :

(i) Java Bean methods

(ii) Bean properties

(iii) Java Bean events.

Or

10. (a) "Java server pages simplify the delivery of dynamic web content". Justify this statement with suitable example program.

(b) Discuss the JSP custom-tag libraries.
