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B. E. (Seventh Semester) Examination,

April-May 2020/NOV-DEC2020

(New Scheme)

(ET & T Engg. Branch)

COMPUTER NETWORKS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Attempt all questions. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d).*

Unit-I

1. (a) What is meant by topology? Name the various topologies of the network. 2

(b) Explain OSI model its functions, protocols and services of each layer. 7

(c) Explain the signal encoding technique for digital to digital conversion using polar method, also explain how NRZ-L differ from NRZ-I. 7

(d) Explain the transmission of digital data. 7

Unit-II

2. (a) What is Bit Stuffing? 2

(b) If the divisoris 1101 and the meassage bits are 100100. Obtain the CRC code. 7

(c) Explain the flow control mechanisms applied in data link layer. 7

(d) Write short notes on : 7

(i) Data transparency

(ii) HDLC

Unit-III

3. (a) Explain fast Ethernet. 2

(b) Discuss various IEEE standards. Explain working of IEEE 802·3. 7

(c) Draw and explain frame format of FDDI protocol. 7

(d) Explain the CSMA/CA. 7

Unit-IV

4. (a) Explain the structure of IP address. 2

(b) State difference between IPV4 and IPV6 protocols. 7

(c) Write short notes on ARP and ICMP. 7

(d) Explain the relationship of repeater, bridges, routers and gateway to OSI reference model. 7

Unit-V

5. (a) Define the term HTTP. 2

(b) What is ATM reference model? Name the ATM layers and their functions. 7

(c) List out differences between circuit and packet switching. 7

(d) Explain virtual connection, identifiers, cells and connection establishment. 7

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B. E. (Seventh Semester) Examination,

April-May 2020 / NOV-DEC 2020

(New Scheme)

(Et & T Engg. Branch)

WIRELESS COMMUNICATIONS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Attempt all the questions. Part (a) is compulsory of each unit and carries 2 marks. Attempt any* ***two*** *from (b), (c) and carries 7 marks.*

Unit-I

1. (a) Define wireless communication. 2

(b) Describe the features of 2 G, 3 G and 4 G system in detail. 7

(c) Discuss evolution of Mobile radio communication. 7

(d) Describe paging system with block diagram. 7

Unit-II

2. (a) Define the term frequency reuse. 2

(b) Describe channel Assignment strategies in detail. 7

(c) Describe micro cell zone concept with diagram. 7

(d) Describe Handoff strategies with diagram. 7

Unit-III

3. (a) Give frequency bands of GSM. 2

(b) Describe GSM Architecture in detail. 7

(c) Describe GSM Channel in detail.

(d) Describe GSM security in GSM. 7

Unit-III

4. (a) What is P-N sequence generator. 2

(b) Describe MSK (minimum shift keying) Transmitter and receiver with diagram. 7

(c) Describe GMSK in detail. 7

(d) What is spread spectrum. Describe DS-SS system? 7

Unit-V

5. (a) Define the term scattering. 2

(b) Discuss signal propagation in wireless communication with diagram. 7

(c) What are the main problems of signal propagation? 7

(d) What is diversity and different types of diversity methods? 7

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B. E. (Seventh Semester) Examination, April-May 2020/ NOV-DEC 2020

(New Scheme)

(Et&T Branch)

MANAGEMENT CONCEPTS & TECHNIQUES

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Attempt all questions. Part (a) of each unit is complsory and attempt any* **two** *parts from (b), (c) and (d).*

Unit-I

1. (a) Justify Management is an Art as well as Science. 2

(b) Explain in detail the functions of Management, giving example wherever necessary. 7

(c) What is Fayolism? Explain its fourteen principles. 7

(d) Explain MBO. What are its advantages & disadvantages? 7

Unit-II

2. (a) Differentiate between Recruitment and Selection. 2

(b) What is the importance of training to employees? What are different types of training program? 7

(c) What do you mean by conflict in an organization? What are different reasons of conflict & how can conflict be managed effectively in an organization? 7

(d) Differentiate between Maslow's and Herzberg's theory of motivation in detail. 7

Unit-III

3. (a) Name the factors that make for micro and macro environment. 2

(b) What are 4 P's of Marketing Mix? Explain in detail. 7

(c) What do you understand by B2B? How can you differentiate between B2B and B2C? 7

(d) What do you mean by Break Even Analysis? What are its advantages to a company? 7

Unit-IV

4. (a) Name 5 P's of Production Management. 2

(b) Differentiate between Batch & Project production with their respective characteristics. 7

(c) What are the basic principles of Material Management? 7

(d) Differentiate between Pert and CPM. 7

Unit-V

5. (a) Name the types of Business Ownership. 2

(b) What are the advantages & disadvantages of Co-operative Society? 7

(c) Differentiate between Public and Private Enterprise. 7

(d) Write short note on Franchise and NGOs. 7

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B. E. (Seventh Semester) Examination, April-May 2020/NOV-DEC 2020

(New Scheme)

(Et & T Engg. Branch)

DIGITAL CIRCUIT DESIGN with VERILOG HDL

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Part (a) of each question is compulsory. Attempt any* ***two*** *parts from (b), (c) and (d) of each question.*

Unit-I

1. (a) Define complier directives in Verilog HDL. 2

(b) Differentiate system TASK and FUNCTIONS of Verilog HDL with an examples. 7

(c) Explain typical design flow of HDL withs its popularity in designing and Verification. 7

(d) Enlist data type used in Verilog HDL with its syntax. 7

Unit-II

2. (a) Enlist operator in Verilog HDL. 2

(b) Explain the gate level and stricter level modelling in Verilog. 7

(c) Design and implement a 4_bit Ripple adder using Structural modelling (using Full adder) Verilog HDL. 7

(d) Design and implement 16 : 1 Multiplexer using Generate block of 4 : 1 MUX in Verilog HDL. 7

Unit-III

3. (a) Differentiate Verilog and VHDL. 2

(b) Write the verilog code for a 3 : 8 decoder circuit. 7

(c) Draw the structure of 16 : 1 De-multiplexer and write down Verilog code. 7

(d) Write the verilog code for Binary to gray Code Converter. 7

Unit-IV

4. (a) What is Flip Flop? 2

(b) Write a verilog code for the BCD Counter. 7

(c) Design a T and J-K flip flop circuit Verilog HDL. 7

(d) Write a verilog code to design shift registers using 2 : 1 multiplexer only. 7

Unit-V

5. (a) Discuss More and Mealy FSM network. 2

(b) Write verilog HDL code of serial binary adder as a Mealy network. 7

(c) Design and implement Vending Machine. 7

(d) Explain the relevance of implication table in state machine concepts. 7

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B. E. (Seventh Semester) Examination, April-May 2020 / NOV-DEC 2020

(New Scheme)

(Et&T Engg. Branch)

RADAR and NAVIGATIONAL AIDS

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : *Attempt all questions. Part (a) of each questions is compulsory. Attempt any* ***two*** *parts from (b), (c) and (d) of each question.*

Unit-I

1. (a) Explain the following : 2

(i) Blind speed

(ii) Pulse repeatation frequency

(b) Prove that the maximum radar range is directly proportional to one fourth power of Antenna gain. 7

(c) Define threshold detection. What do you mean by probability of detection of false alarm? 7

(d) (i) The receiver of a radar has a noise figure 6 db. If the IF bandwidth B of the receiver be 3 MHz, then calculate the minimum detable power.

(ii) If the Radar is designed for operation at 10 GHz with an antenna of diameter 2 m, calculate the peak power required to have a maximum range of 1000 km with a target of cross sectional area 20 m^2. 7

Unit-II

2. (a) Explain the Doppler principle. 2

(b) Explain the term lobe switching and sequential lobbing. 7

(c) An MIT radar is operated at 9 GHz with a PRF of 3000 PPS. Calculate the first two blind speeds for this radar. Derive the formula used. 7

(d) Draw and explain simple block diagram of MIT RADAR. 7

Unit-III

3. (a) Define Scattering, Refraction and Diffraction in terms of Radar wave. 2

(b) Discuss the effect of forward scattering from a round earth surface of radar waves. 7

(c) Explain Environmental Noise in details. 7

(d) A low power short range radar with a low noise RF amplifier with gives an overall noise figure of 4.77 dB. If a antenna diameter is 1 m, bandwidth is 500 kHz, the operating frequency is 8 GHz with 5 m^2 cross section area at a maximum distance of 12 km. What must be peak power transmitted? 7

Unit-IV

4. (a) What are the different function of radar Antenna? 2

(b) Explain the various parameters of Radar antenna. 7

(c) Explain the significance of cosecant square antenna and any one method of generating cosecant square pattern. 7

(d) Explain the super Hetrodyne receiver with the proper block diagram. 7

Unit-V

5. (a) What do you mean by the term automatic frequency control in radar receiver? 2

(b) What do you mean by electronic counter measures and electronic counter-counter measures? Explain in details. 7

(c) Explain the construction and basic operation of Magnetron. 7

(d) Explain A-scope and PPI display with reference to radar. What are their limitation? 7

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328749(28)

B. E. (Seventh Semester) Examination, April-May 2020

NOV-DEC 2020

(New Scheme)

(Et & T Branch)

DIGITAL IMAGE PROCESSING

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note *: Attempt any **two** parts of (b), (c) and (d) of all questions. Part (a) of each unit is compulsory.*

Unit-I

1. (a) Define Image Processing. 2

(b) With the help of block diagram, explain the fundamental steps in digital image processing. 7

(c) Explain the concept of sampling and quantization using a single example. 7

(d) Write short notes on : 7

(i) Elements of Visual Perception

(ii) Image Sensing and Acquisition

Unit-II

2. (a) Define Histogram. 2

(b) Explain with a block diagram, basic steps of image enhancement in frequency domain. 7

(c) Write short notes on : 7

(i) Gaussian filters

(ii) Homomorphic filtering

(d) Write short notes on : 7

(i) Intensity Slicing

(ii) Gray level to color transformation

Unit-III

3. (a) Define segmentation. 2

(b) Explain some basic relationship between Pixels, Point, Line and Edge Detection. 7

(c) Write short notes on : 7

(i) Canny Edge Detection

(ii) Pyramid Edge Detection

(d) Explain boundary descriptors and fourier descriptors. 7

Unit-IV

4. (a) Define Thresholding in image processing. 2

(b) Explain use of boundary characteristics of Histogram improvement and local thresholding. 7

(c) Write short notes on : 7

(i) Global Thresholding

(ii) Adaptive Thresholding

(d) Explain region growing, region splitting and merging. 7

Unit-V

5. (a) Define Image Compression. 2

(b) Explain basic model of image restoration process. Explain any four important noise probabilityy density function. 7

(c) Explain Wiener filtering in image processing. 7

(d) Write short notes on : 7

(i) Geometric Transformation

(ii) Spatial Transformation