

Instructions:

Answer to the two sections must be written in separate answer books

Attempt ALL questions from Section I & Section II which are compulsory.

Use of Mathematical and steam tables and pocket calculator (non-programmable) is permissible

Illustrate your answers with neat sketches, wherever necessary

Figures to the right indicate full marks

Assume suitable additional data, if necessary

The student should read the name and code of the subject and confirm that the question paper received is as per subject registered.

SECTION - I

- Q.1. Solve any Three of the following (12)
 (a) Define following terms.

(i) Channel encoding (ii) Source coding

(b) Explain how a MIDI device plays a MIDI file to generate sound.

(c) State Shanon theorem. Give an example.

(d) Enlist the objective of Hybrid Encoding.

(e) Describe how image can be compressed.

- Q.2. Solve any Two of the following

(a) Encode & Decode the following message using RLE Method
 a a a b b b c c d d d d a a a

(b) What is the use of MIDI software? Give an example.

(c) Explain the down sampling & up sampling in JPEG file standards.

(d) Explain the Arithematic Encoding technique.

- Q.3. Solve any Two of the following

(a) Encode & decode the following message using Huffman coding
 a a a b b a a a d d d d e e e a b b e f f g g g h

(b) Describe LZW encoding with an example

(c) Explain F- DCT used in JPEG

SECTION-II

- Q.4. Solve any Three out of the Five (12)
 (a) Explain data and file format standards.

(b) State the need of video compression.

(c) State the principle of predictive loss less coding technique.

(d) Explain MPEG objectives.

(e) Differentiate between MPEG2 and MPEG4.

- Q.5. Solve any Two out of the Four (12)

(a) Discuss RIFF chunks and RIFF waveform Audio file format in detail.

(b) Explain GIF file format with its advantages and disadvantages.

(c) Explain TIFF file format

(d) Explain JPEG standard for lossy compression.

- Q.6. Solve any Two out of the Three (16)

(a) Explain the term entropy in Information Theory and also prove that entropy is maximum when all source outputs have equal probability.

(b) Explain MIDI in detail with the help of 5 – pin diagram, MIDI messages and MIDI hardware & differentiate between midi and digital audio.

(c) Explain JPEG objectives and discuss JPEG DCT encoding quantization in detail.

Shri Vile Parle Kelavani Mandal's
SHRI BHAGUBHAI MAFATLAL POLYTECHNIC
AUTONOMOUS SEMESTER EXAMINATION NOVEMBER/DECEMBER, 2015

TIME ALLOWED: 03 HOURS
MAXIMUM MARKS: 80
SUBJECT: WEB TECHNOLOGY

Seat no. _____
SEMESTER: V/VI
COURSE: IT/CSE
CODE: 128921

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SECTION - I

- Q1. Solve Any Three (12)
- (a) What is parsing? Explain SAX based parser.
 - (b) Write features of web browser.
 - (c) Write a program to demonstrate looping and sorting of XSLT.
 - (d) Explain XML Namespace and URL with example.
 - (e) Compare Dynamic webpage and static web page.
- Q2. Attempt Any Two out of Four (12)
- (a) What is DTD? Explain types of DTD? How to overcome limitations of DTD?
 - (b) Explain CSS in detail.
 - (c) Enlist and explain built in functions of vbscript.
 - (d) How to plan and maintain a website?
- Q3. Solve Any Two (16)
- (a) Define DHTML. Explain event and event handling in DHTML.
 - (b) Explain in detail the working of web browser.
 - (c) Write a code in vbscript/ java script to validate atleast 5 different Inputs on HTML page. Must contain textbox, Radio button, checkbox, drop down, submit and Reset button.

SECTION - II

- Q4. Solve Any Three out of Five (12)
- (a) What is Record Set? How do you open record set in ASP?
 - (b) Define cookies? Explain with its uses.
 - (c) Explain in details about Microsoft IIS.
 - (d) Write any four functions of web server.
 - (e) What is ADO? Write any three application of it.
- Q5. Solve Any Two out of Four (12)
- (a) Define Response object? List its methods with example.
 - (b) Describe search engine? Explain any one in details.
 - (c) What is ASP? What is the importance of ASP object?
 - (d) Explain the properties of connection object in ADO with example.
- Q6. Solve Any Two out of Three (16)
- (a) Explain Page Rank algorithm with example.
 - (b) Write step by step process how to read data from database using Record Set object.
 - (c) What is Database? Explain with example how do i connect to a database using DSN-less connection.

ALLOWED: 03 HOURS

MAXIMUM MARKS: 80

ECT: NETWORK ADMINISTRATION - I

SEMESTER: V

COURSE: COMPUTER ENGINEERING

CODE: 120808

Directions:
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Attempt ALL questions from Section I & Section II which are compulsory.

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Demonstrate your answers with neat sketches, wherever necessary

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SECTION - I

Solve Any Three

(12)

- (a) What are the duties and responsibilities of network administrator? How are they different from network engineer?
- (b) Explain the working of RJ-45 with the help of a neat diagram. How is cross over connection made using RJ-45.
- (c) How is guided media different from unguided media? What are the three major classes of guided media? Explain in brief twisted pair cable construction.
- (d) What is LDAP protocol? Where is it used?
- (e) Which has more overhead a bridge or a router? Explain your answer.

Solve Any Two

(12)

- (a) What is active directory? Why do we need achieve directory? What are the different protocols used in active directory? Explain X-500 protocol features.
- (b) What are the advantages of optical media over the coaxial and twisted pair? Explain in the detail the working of optical fibre cable.
- (c) Which is the access method used by wireless LAN? Why?
- (d) What are the main features that differentiate a router from a bridge? What is transparent bridge?

Solve Any Two

(16)

- (a) Explain in detail the connection oriented protocols? How are they different from connectionless protocols? Explain TCP features in detail.
- (b) Explain in detail how you will set up a TCP/IP connection on your windows PC. Explain three way handshaking.
- (c) A bridge uses a filtering label which a router uses a routing label. Explain the difference. Differentiate between gateway, router and bridge.

SECTION - II

Q.4 Attempt Any Three

- (a) Differentiate between Direct and Indirect Delivery.
- (b) Why do OSPF messages propagate faster than RIP messages?
- (c) What is VPN and why is it needed?
- (d) Why does IPsec need a security association?
- (e) Explain the working of RIP protocol. What are its drawbacks?

Q.5 Attempt Any Two

- (a) Explain in short the two mode instability in routing. What are the various ways to overcome it?
- (b) List three forwarding techniques and explain each briefly.
- (c) Explain different operation modes of IPsec?
- (d) What is the difference between intradomain and interdomain routing? Explain LSR.

Q.6 Attempt Any Two

- (a) Explain the working of OSPF protocol.
- (b) What is IKE? Explain in detail.
- (c) What is GSM? Explain the working of GSM.

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AUTONOMOUS SEMESTER EXAMINATION NOVEMBER/DECEMBER, 2015

Seat no. _____

(12) ALLOWED: 03 HOURS

(12) MARKS: 80

NETWORK ADMINISTRATION

SEMESTER: V

COURSE: IT

CODE: 120912

- (12) *To the two sections must be written in separate answer books.*
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Answer your answers with neat sketches, wherever necessary.
To the right indicate full marks.
Indicate additional data, if necessary.
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SECTION-I

Attempt Any Three

(12)

- (a) Differentiate between gateways and bridge.
(b) Explain the working of Network printer.
(c) What are the duties of network engineer?
(d) State working principles of X500- directory service.
(e) Which access method is used by wireless LAN? Why?

Attempt Any Two

(12)

- (a) Differentiate between wired and wireless network. List some important protocols used on these network.
(b) Describe different types of cables. Give its application.
(c) What are the responsibilities of network administrator in maintaining the network?
(d) What is LDAP? Where is it used?

Attempt Any Two

(16)

- (a) Describe DHCP protocol in detail and compare with BOOTP protocol.
(b) Describe domain name system in detail. Differentiate between the working of stub resolver and full resolver with the help of diagram.
(c) What is the significance of Active directory service? Describe it's features and compare with NDS with suitable example. Explain the tree structure of ADS.

SECTION-II

- Q.4** Attempt Any Three out of Five (12)
(a) What are the different commands to check the network connectivity on a TCP/IP Network?
(b) What is Netstat? How is it helpful in network?
(c) Give the features of wireshark.
(d) What are the different webs based tools for system and network analysis?
(e) Enlist the different network monitoring tool in open source.
- Q.5** Attempt Any Two out of Four (12)
(a) What is security zone? What are the different ways to enable security zones?
(b) Differentiate between Internet, Intranet and Extranet.
(c) State the principle of PEM protocol.
(d) Write note on Keeboeos and Nagios
- Q.6** Attempt Any Two (16)
(a) Explain in detail the architecture of IEEE 802.11
(b) Describe SBTP protocol and its working (at least two scenarios)
(c) What is firewall? Enlist its all types and describe any one in detail also explain the DMZ.

TIME ALLOWED: 03 HOURS

MAXIMUM MARKS: 80

SUBJECT: OPTICAL FIBRE COMMUNICATION

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SECTION - I

Q1 Solve Any Three out of Five

(12)

- (a) State advantages of fiber optic.
- (b) What are the causes for signal alternation in a fiber?
- (c) Explain total internal reflection.
- (d) Define Refractive Index, classify the fiber according to Refractive Index and explain in brief.
- (e) Draw basic fiber optic cable and explain in brief its parts.

Q2 Solve Any Two out of Four

(12)

- (a) Define Dispersion and explain different types of dispersion mechanism.
- (b) With neat diagram explain the basic principle of absorption and emission of radiation from semiconducting material.
- (c) Define Acceptance angle and Numerical Aperture. Derive the expression of numerical aperture in terms of Refractive indices.
- (d) What are the steps in the fiber manufacturing process? With neat diagram explain the fiber drawing process.

Q3 Solve Any two out of Three

(16)

- (a) What different types are of perform fabrication? Explain with neat diagram the MCVD process.
- (b) Explain Absorption losses, scattering losses and bending losses with respect to its types.
- (c) What is the significance of Population Inversion? Explain Hetrojunction Semiconductor injection LASER.

SECTION - II

Q4 Solve Any Three out of Five

(12)

- (a) Explain PIN diode
- (b) Explain Rate earth doped amplifier.
- (c) Explain mode scramblers.
- (d) Writ short note on 'SONET'
- (e) Explain fiber connector types

Q.5 Solve Any Two out of Four
Explain "Optical Time Domain Reflectometry" – OTDR in detail.

- (a) Explain "Optical Time Domain Reflectometry" – OTDR in detail.
- (b) Write short note of 'WDM'
- (c) Explain with help of diagrams, working of Avalanche photodiode
- (d) Explain (i) Absorption Coefficient (ii) Quantum Efficiency and write expression for Responsivity.

Q.6 Solve Any Two out of Three
Explain types of splicing and their advantage/ disadvantage

- (a) Explain types of splicing and their advantage/ disadvantage
- (b) Explain any one method to measure dispersion in the fiber dispersion measurement.
- (c) Explain link power budget bandwidth consideration, take help of example.