

DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2018

COMPUTER NETWORKS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. State the term protocol.
2. Write the address space of IPv4.
3. Define socket address.
4. Define throughput in a network.
5. Name the components of URL.

(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Explain briefly on any two topologies.
2. Describe IEEE Project 802.
3. Explain Distance vector routing algorithm.
4. Summarize uses of UDP.
5. Explain DNS messages.
6. Explain FTP.
7. Compare connectionless and connection oriented services.

(5×6 = 30)

PART — C
(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain TCP/IP protocol suite. 8
(b) Describe briefly on the architecture of wireless LAN. 7

OR

- IV (a) Explain the architecture of virtual LAN. 9
(b) Explain any two LAN connecting devices. 6

UNIT — II

- V (a) Describe IPV4 addressing. 9
(b) Explain path vector routing. 6

OR

- VI (a) Describe Link state routing. 9
(b) Differentiate between multicasting and broadcasting. 6

UNIT — III

- VII (a) Explain congestion control in TCP. 9
(b) Explain piggybacking. 6

OR

- VIII (a) Summarize SCTP services. 8
(b) Describe briefly on User Datagram. 7

UNIT — IV

- IX (a) Describe the architecture of WWW. 9
(b) Explain briefly on TELNET. 6

OR

- X (a) Explain Simple Mail Transfer Protocol. 9
(b) Describe Post Office Protocol. 6

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MOBILE COMMUNICATION

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. Name any three multiple access techniques.
2. Define satellite communication.
3. Expand WLL and WPAN.
4. List the services provided by IEEE 802 LLC.
5. Define piconet.

(5 × 2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Describe second generation cellular system TDMA.
2. Write short notes on CDMA multiple access technique.
3. Compare the orbits LEO, MEO and GEO.
4. Explain capacity allocation time division.
5. Describe the physical layer of IEEE 802.11.
6. Briefly explain narrow band microwave LAN.
7. List Bluetooth applications.

(5 × 6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain CDMA and TDMA design considerations. 10
 (b) Differentiate between soft handoff and hard handoff. 5

OR

- IV (a) List and explain five ways of increasing the capacity of a cellular system. 7
 (b) Compare FDMA, TDMA and CDMA multiple access techniques. 8

UNIT — II

- V (a) Explain Wireless Local Loop. 8
 (b) Describe the services provided by IEEE 802.16 standard. 7

OR

- VI (a) Explain capacity allocation frequency division. 7
 (b) List the standards provided by IEEE 802.16 and its architecture. 8

UNIT — III

- VII (a) Explain the application areas for Wireless LAN. 10
 (b) Describe about spread spectrum LAN. 5

OR

- VIII (a) Explain IEEE 802.11 Medium Access Control. 9
 (b) Draw the protocol architecture of 802.11. 6

UNIT — IV

- IX (a) Explain the architecture of Bluetooth with a diagram. 10
 (b) Briefly describe 802.15.3 protocol for WPAN. 5

OR

- X (a) Define scatternet. 3
 (b) Discuss the relation between master and slave in a piconet. 4
 (c) Write short notes on IEEE 802.15.3 and IEEE 802.15.4 standards. 8

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SMART DEVICE PROGRAMMING

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. List any two versions of Android operating system.
2. Mention the function of Android SDK.
3. State activity in Android.
4. Write the XML code to create a text field accepting only numbers in Android.
5. Name any two multimedia tags in HTML 5. (5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Compare Android OS and iOS.
2. Explain the important files and folders in an Android project.
3. Explain how to link activities using intent in Android.
4. Describe broadcast receivers in Android.
5. Compare TextView and EditText components in Android UI.
6. Explain how to store data into external storage using file streams.
7. List the advantages of PhoneGap technology. (5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Describe the steps for installing Eclipse IDE. 9
 (b) Write a short note on Android OS. 6

OR

- IV (a) Describe the steps for installing Android Studio IDE. 8
 (b) Explain how to install Android SDK in Android Studio. 7

UNIT — II

- V (a) Explain the life cycle of an Android activity. 9
 (b) Differentiate between implicit and explicit intents. 6

OR

- VI (a) Explain various Android components. 8
 (b) Describe how to return results from Android activity using intent. 7

UNIT — III

- VII (a) Explain different types of menus in Android UI. 8
 (b) Describe how to send an SMS from Android application. 7

OR

- VIII (a) Describe how to create and insert values in SQLite database. 8
 (b) Write the Android code to validate a text password field ; password field should not be blank and length should be from 5 to 8. 7

UNIT — IV

- IX (a) Describe the procedure to create and call JavaScript function in a webpage. 8
 (b) Explain any seven form input elements newly introduced in HTML 5. 7

OR

- X (a) Describe the methods by which we can insert CSS code in webpages. 9
 (b) Explain HTML 5 event attributes. 6

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(REVISION — 2015)

Reg. No.

Signature

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MICROCONTROLLERS

[Time : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. List four features of AVR.
2. Write the number of general purpose registers in AVR.
3. Name different ports in ATmega32.
4. Give the value of TCCR0 for Timer0 in Normal mode with no prescale.
5. Name the serial interface standard used in serial communication.

(5 × 2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Give different data format representation in AVR with example.
2. Illustrate the need of the initialization of stack pointer in AVR.
3. Describe the steps to make PORTA as output and PORTB as input in AVR with example in assembly language and in C.
4. Describe different ways to create delay in AVR embedded C.
5. Compare CTC and normal mode in Timer0 and show how these modes are selected in timer0.
6. Define Interrupt. Describe different steps in executing an interrupt.
7. Differentiate synchronous and asynchronous methods of serial data communication.

(5 × 6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III (a) Explain the Data memory organization of AVR. 10
 (b) State the role of program counter in Executing a program. 5

OR

- IV (a) Show the bit SREG in AVR and indicate the function of each bit. 10
 (b) Describe LDI, LDS and IN instructions with example. 5

UNIT — II

- V (a) Illustrate conversion of data from BCD to ASCII with an example. 5
 (b) Write AVR C program to convert Packed BCD 0×45 to ASCII and display the bytes in PORTB and PORTC. 10

OR

- VI (a) Write short note on Data Serialization in C. 5
 (b) Write a program to send the value 0×45 serially one bit at a time through Pin number 4 of PORTD. LSB should go first. 10

UNIT — III

- VII Explain Timer0 in detail with all its registers. 15

OR

- VIII (a) Explain External Hardware interrupts in Atmega32. 8
 (b) Describe enabling and disabling of Timer0 overflow interrupt with instructions. 7

UNIT — IV

- IX Give the pin details of LCD and explain LCD interfacing with diagram. 15

OR

- X (a) Describe the use of DAC and its interfacing with an AVR with Diagram. 9
 (b) Explain the interfacing of a temperature sensor to AVR with diagram. 6