TED (15) – 6041
(REVISION — 2015)

Reg. No. .....
Signature .....

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

ADVANCED MICROPROCESSOR

[*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. Specify AX, BX registers in 8086 micro-processor.
2. Mention pipelining in 8086 micro-processor.
3. Write an example of Register indirect Addressing mode.
4. Write advantages of PVAM of 80386.
5. Differentiate Core and Hyper threading. (5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. Draw write timing diagram of 8086 in minimum mode.
2. Discuss memory segmentation of 8086.
3. Specify any three addressing modes of 8086 with example.
4. Describe type 0, type 1, type 2 interrupts in 8086.
5. Draw and discuss general purpose registers of 80386.
6. Discuss real address mode and virtual 8086 address mode of 80386.
7. Compare core i3, i5, i7. (5 × 6 = 30)

Marks

PART — C

(Maximum marks : 60)

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

Unit — I

III (a) Draw the pin diagram of 8086. 10

(b) Discuss AD_0AD_{15}, ALE, MN/MX, BHE. 5

Or

IV (a) Draw and discuss minimum mode configuration of 8086. 8

(b) Discuss Register organisation of 8086. 7

Unit — II

V (a) Draw interrupt vector table of 8086. 8

(b) Discuss any four string manipulation instructions. 7

Or

VI (a) Discuss the following 'Pseudo instructions' :

(i) MACRO (ii) SEGMENT (iii) STRUCT (iv) EXTERN 8

(b) Write an ALP for two 16 bit addition. 7

Unit — III

VII (a) List main features of 80286. 8

(b) Differentiate L1, L2 and L3 cache memory. 7

Or

VIII (a) Draw Pentium processor architecture. 8

(b) List main features of Pentium. 7

Unit — IV

IX (a) Differentiate single core and multi core processors with block diagram. 8

(b) List the limitations of single core processor. 7

Or

X (a) List the important technological features of IA processor. 8

(b) Specify the advantages of multi-core technology. 7

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

COMMUNICATION SYSTEMS

[*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 the microwave frequency range of Electromagnetic spectrum.
2. Define geostationary satellite.
3. Draw the symbol of Tunnel diode and Gunn diode.
4. Define a cell.
5. List two optical sources used in fibre optic communication. (5×2 = 10)

PART — B

(Maximum marks : 30)

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

1. Describe the working principle of reflex klystron with a neat diagram.
2. Draw any four types of horn antenna structure.
3. List any three advantages and disadvantages of TDMA.
4. Draw any four types of satellite communication orbits.
5. Differentiate single mode, multimode and graded index mode fibres.
6. List any six advantages of bluetooth.
7. Describe numerical aperture and acceptance angle. (5×6 = 30)

Marks

PART — C

(Maximum marks : 60)

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

Unit — I

III (a) Draw the block diagram of microwave transmitter and state the need of each block. 7

(b) Draw the block diagram of microwave repeater and describe each block. 8

Or

IV (a) With a neat diagram illustrate the construction and operation of Travelling wave tube (TWT). 12

(b) Draw the VI characteristics of Tunnel diode and mark negative resistance region. 3

Unit — II

V (a) Describe the principle of satellite communication with a neat diagram. 8

(b) List any seven advantages of satellite. 7

Or

VI (a) Describe DTH TV system. 9

(b) List any six application of satellite. 6

Unit — III

VII (a) Describe fibre optic communication with a neat block diagram. 10

(b) Describe cable losses in fibre optic communication with a neat block diagram. 5

Or

VIII (a) Draw the symbol of LED and illustrate the working of LED with energy band diagram. 9

(b) List any six applications of fibre optics in communication. 6

Unit — IV

IX (a) Describe GSM network architecture with a neat figure. 9

(b) State : (i) Frequency reuse (ii) Hand off (iii) Channel fading. 6

Or

X (a) Compare Wi-Fi and Wi-Max. 8

(b) State Features of 3G and 4G. 7

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

RADAR AND NAVIGATION

[*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. Define pulse repetition frequency in radar system.
2. Write the expression for Doppler shift in frequency.
3. State the use of MTI radar.
4. State the principle of hyperbolic navigation system.
5. List any four applications of GPS navigation system. (5 × 2 = 10)

PART — B

(Maximum marks : 30)

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

1. With the help of a simple diagram explain the basic principle of radar.
2. Explain how a confusion in range arises due to the pulse repetition frequency.
3. With the help of a simple block diagram explain the operation of delay line canceller.
4. Explain various types of tracking radars.
5. With the help of diagrams explain the principle of operation of loop antenna.
6. Draw the block diagram of Distance Measuring Equipment. Explain its operation.
7. Briefly explain the Differential GPS system. (5 × 6 = 30)

Marks

PART — C

(Maximum marks : 60)

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

UNIT — I

III (a) Derive the radar range equation. Explain the factors that affect the maximum range of a radar. 9

(b) Explain the applications of radar system. 6

OR

IV Explain the significance of the following with reference to a radar system.

(i) Radar cross section of targets (ii) Minimum detectable signal

(iii) Receiver Noise 15

UNIT — II

V (a) With the help of diagrams explain various types of radar displays. 10

(b) Draw the block diagram of simple MTI Signal Processor. 5

OR

VI (a) With the help of a block diagram explain the operation of FM CW radar. 10

(b) Explain the Doppler effect in radar system. 5

UNIT — III

VII (a) Draw and explain the block diagram of ground equipment used in VOR. 8

(b) With the help of diagrams explain the principle of operation of goniometer. 7

OR

VIII (a) With the help of diagrams explain the LORAN navigation system. 7

(b) Draw the block diagram of VOR receiver and explain its operation. 8

UNIT — IV

IX (a) Explain the operation of Instrument Landing System. 9

(b) List the advantages and disadvantages of Microwave Landing System. 6

OR

X (a) Briefly explain the IRNSS navigation system. 7

(b) Briefly explain the GNSS navigation system. 8