CO11303

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION

EVEN 2014-15

Programme : **Computer Engineering**
Course Title : **Microprocessor Programming**

03Hours / 80 marks Enrolment No. | | | | | | | | | | |

Instructions:
1. Use separate answer book for section I and section II.
2. Attempt all the questions from each section.
3. Illustrate your answers with neat sketches wherever necessary.
4. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
5. Marks on Right Hand Side indicate full marks for the question.
6. Assume suitable additional data, if necessary

SECTION – I

Q.1 Attempt any SIX **12 Marks**

a. Define address bus and data bus.
b. State the functions of INTR and INTA pins in 8085 pin diagram.
c. State any two features of 8086 microprocessor.
d. State the different names of flags in 8086.
e. What are ES and CS in 8086 microprocessor.
f. How 8086 access immediate and register data ? Give an example.
g. Give any two instruction from process control set and describe it.
h. Write any four string instructions in 8086 with its function.

Q.2 Attempt any FOUR **16 Marks**

a. Describe different addressing modes in 8085.
b. Draw architecture Block diagram of 8085 microprocessor.
c. Draw register organization in 8086 and explain concept of pipelining.
d. Describe any three instruction from Arithmetic and logical data transfer instruction set.
e. Explain LAHF and SAHF instructions of flag transfer instruction set in 8086.
f. What is the difference between JMP and CALL instruction in 8086.

Q. 3 Attempt any TWO **12 Marks**

a. Draw and Explain signal description of 8086.
b. Draw circuit diagram in minimum and maximum mode operation of 8086 and explain in brief .
c. Describe addressing modes in 8086

SECTION – II

Q.4 Attempt any SIX (6 X 2 Marks) **12 Marks**

a. Define any one assembler directive with example.
b. Write down typical procedure structure.
c. Describe the meaning of directive DUP & ENDS.
d. List four directives of macros.
e. Give any two advantages of procedure.
f. State the function of linker.
g. Compare I/O & memory mapped I/O (any two points)
h. How many no of address lines are required to address 4K memory.

Q.5 Attempt any FOUR (4 X 4 Marks) **16 Marks**

a. Describe execution of a CALL instruction.
b. What is the difference between NEAR & FAR procedure.
c. Write an ALP for addition of two 16 bit numbers.
d. Write ALP to transfer block of data from one location to other (assume suitable data)
e. Interface two 4 Kbyte RAM with 8086. Give address range of RAM.
f. Explain following assembler directive i) Assume ii) DB iii) SEGMENT iv) PUBLIC.

Q.6 Attempt any TWO (2 X 6 Marks) **12 Marks**

a. Write algorithm & draw flow chart to arrange 16 bit numbers in descending order. Write program for same.
b. Explain maximum mode interfacing of memory & I/O devices.
c. What do you mean reentrant & recursive procedure?

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION
EVEN 2014-15

Programme : **Computer Engineering**
Course Title : **Computer Architecture and Maintenance**

03Hours / 80 marks Enrolment No.

***Instructions*:**
1. Use separate answer book for section I and section II.
2. Attempt all the questions from each section.
3. Illustrate your answers with neat sketches wherever necessary.
4. Use of Mathematical Tables, Steam Table and Pocket Calculator (non-programmable) is permissible.
5. Marks on Right Hand Side indicate full marks for the question.
6. Assume suitable additional data, if necessary

SECTION – I

Q.1 Attempt any SIX **12 Marks**

a. Define i) Address line, ii)Data line.
b. Enlist processor modes.
c. What is Cache memory? Give one importance.
d. Enlist the types of RAM.
e. Define i) Track, ii)Sector
f. What are the types of storage devices?
g. What is Landing zone and MBR?
h. Enlist the types of display device.

Q.2 Attempt any FOUR **16 Marks**

a. What are features of processors? Enlist any eight.
b. Enlist the motherboard selection criteria.
c. Explain MFM recording techniques in short.
d. What is formatting? Explain low level formatting.
e. Draw and explain the block diagram of CRT colour monitor.
f. Explain the block diagram of a video accelerator card.

Q. 3 Attempt any TWO **12 Marks**

a. Explain Hub chipset architecture.
b. Explain the construction and working of Hard disk.
c. Explain the working and functional block diagram of LCD monitor.

SECTION II

Q.4 Attempt any SIX **12 Marks**

a. Enlist the types of input and output devices.
b. Define i)Load regulation, ii) Line regulation
c. Enlist any four symptoms of power problems.
d. What is Circuit breaker?
e. Enlist the features of USB.
f. Enlist the fire wire features.
g. What is Active and Passive maintenance?
h. Enlist any four antivirus.

Q.5 Attempt any FOUR **16 Marks**

a. Explain the block diagram of scanner.
b. What are the types of Printers? Give its characteristics.
c. Explain block diagram of SMPS.
d. Explain Bluetooth in detail.
e. Explain Centronics in short.
f. How the troubleshooting of PC is done? Explain the procedure.

Q. 6 Attempt any TWO **12 Marks**

a. Explain Modem with its working.
b. Explain block diagram and working of UPS.
c. Explain working if i) Logic probe, ii) Logic pulser.

GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION
EVEN 2014-15

Programme : **Computer Engineering / Information Technology**
Course Title : **Computer Graphics**
03Hours / 80 marks Enrolment No.

***Instructions*:**
1. Use separate answer book for section I and section II.
2. Attempt all the questions from each section.
3. Illustrate your answers with neat sketches wherever necessary.
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5. Marks on Right Hand Side indicate full marks for the question.
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SECTION – I

Q.1 Attempt any SIX **12 Marks**

a. Enlist any two advantages of graphic file format.
b. Define i) Pixel ii) line
c. Enlist any four display devices.
d. Enlist the types of polygons.
e. Define polygon.
f. What is 2D transformation?
g. Define scaling.
h. Differentiate between 2D and 3D transformation. (any two points)

Q.2 Attempt any FOUR **16 Marks**

a. Explain in details the applications of computer graphics. (any four)
b. Write and Explain Bresenham's circle drawing algorithm.
c. Explain inside – outside test of polygon with rules.
d. Explain reflection and shearing transformation in 2D with matrix representation.
e. Describe 3D scaling transformation.
f. Explain rotation about an arbitrary point in 2D.

Q. 3 Attempt any TWO **12 Marks**

a. Explain following display devices (any two)
   i) CRT ii) LCD iii) Plasma panel
b. Write C program for DDA circle drawing algorithm.
c. Explain scan line conversion algorithm.

SECTION II

Q.4 Attempt any SIX **12 Marks**

a. Define fractal lines.
b. Give the concept of interpolation.
c. State any four applications of computer animation.
d. List any four properties of Bezier curve.
e. Define i) Windowing ii) Clipping
f. Define morphing and wrapping.
g. Enlist the advantage of fractal lines.
h. What is frame buffer?

Q.5 Attempt any FOUR **16 Marks**

a. Describe the blending function for cubic Bezier curve.
b. Define and explain normalized transformation and workstation transformation.
c. Explain Koch curve till 2^{nd} approx. and state its application.
d. What are B-spline curves? Explain briefly with few properties.
e. Explain midpoint subdivision algorithm.
f. Explain Sutherland-cohen line clipping algorithm.

Q. 6 Attempt any TWO **12 Marks**

a. Write a short note on i) Morphing ii) Warping
b. Write an algorithm for an arc generation using DDA algorithm.
c. Describe Sutherland Hodgeman polygon clipping algorithm.

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GOVERNMENT POLYTECHNIC MUMBAI
TERM END EXAMINATION
EVEN 2014-15

Programme : Computer Engineering
Course Title : Object Oriented Modeling and Design

03Hours / 80 marks Enrolment No.

***Instructions*:**
1. Use separate answer book for section I and section II.
2. Attempt all the questions from each section.
3. Illustrate your answers with neat sketches wherever necessary.
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SECTION – I

Q.1 Attempt any SIX **12 Marks**

a. State two principles of modeling.
b. Mention the different modeling technique suggested by OMT.
c. Define the term – i) class ii) link attribute
d. Mention and explain any two properties of objects.
e. Differentiate between aggregation and association.
f. List the four components used in UML diagrams.
g. List the types of UML diagram.
h. Define any four rules of UML.

Q.2 Attempt any FOUR **16 Marks**

a. State the importance of modeling in UML.
b. Draw object diagram for ATM system.
c. How abstract classes are useful in developing system.
d. Explain the term multiple inheritance with example.
e. What are UML diagrams used in static modeling? State their importance.
f. Which UML diagrams are used in behavioural modeling? State their importance.

Q. 3 Attempt any TWO **12 Marks**

a. State approaches of OMT by Ram Baugh.
b. What is Dynamic and Functional Model? State its purpose with one suitable example.
c. Explain the system architecture model in detail.

SECTION II

Q.4 **Attempt any SIX** **12 Marks**

a. What is class diagram, where can we use class diagram ?
b. Define following terms with an example
   i) Actor ii) extend dependency.
c. What is collaboration diagram ?
d. What are Nodes and Artifacts in Deployment diagram ?
e. List four use case diagram contents.
f. Define Interface and give its notation.
g. What is a sequence diagram ? Give one example.
h. Define Interaction diagram and list two types of Interaction diagrams.

Q.5 **Attempt any FOUR** **16 Marks**

a. Explain component Diagram with an example.
b. Prepare a use case diagram for an Airline Reservation system.
c. Differentiate between forward engineering and reverse engineering.
d. Draw a class diagram for online shopping store.
e. Draw and explain sequence diagram of Library management system.
f. Explain Activity diagram with UML notation. Give an example.

Q. 6 **Attempt any TWO** **12 Marks**

a. Write short note on
   i) Types and Roles
   ii) Packages.
b. Explain use case diagram with an example of Restaurant having three Actors
   i) Waiter ii) Client iii) Cashier.
c. Define state diagram and Draw a state diagram for a simple digital watch.