

(Please write your Exam Roll No.)

Exam Roll No. 1111011111

END TERM EXAMINATION

FIRST SEMESTER [MCA] DECEMBER 2011

Paper Code: MCA 101

Subject: Fundamental of Information Technology

Time : 3 Hours

Maximum Marks :60

Note: Attempt five questions. Select one question from each unit. Q. 1 is compulsory.

- Q1. Answer all the following questions briefly: (10x2=20)
- What do you mean by process synchronization?
 - Explain the working of Magnetic disk and Optical disk.
 - Explain different types of Hardware devices.
 - What are the different types of translators?
 - Explain data independence in database system.
 - Write a short note on SDLC.
 - Design an algorithm to calculate Armstrong of a number.
 - What is Plotter? How it is different from that of printers.
 - Explain Distributed Database system.
 - What are the different types of addressing modes in Microprocessor 8085?

Unit-I

- Q2. (a) Convert the following: (4)
- $(0.6234)_{10} = (?)_2$
 - $(26.5672)_{10} = (?)_{16}$
 - $(0.0101)_8 = (?)_{10}$
 - $(1010.00111)_2 = (?)_{10}$
- (b) Draw a neat diagram of Microprocessor 8085? What are its different components? (6)
- Q3. (a) Prepare truth and implement its circuit. (5)
- $R'S.T' + S'T' + R.S'T'$ (Using NOR gates only)
 - $P.Q'R + P'Q.R' + P'L.R$ (Using NAND Gates only).
- (b) What are the different types of operations in Microprocessor 8085? Explain with the help of example. (5)

Unit-II

- Q4. (a) What are the different phases of System Development Life Cycle? Briefly explain them. (5)
- (b) "The rules of deciding the postage of a postal parcel is described as follows: if the parcel is to be sent by express, then the basic charge will be \$6Perkg, otherwise the basic charge will be \$4 Perkg. If the distance is over 200km, then each kg will be charged for one more dollar. If the parcel's weight is over 10kg, then another 0.5 dollar will be charged for each kg that exceeds 10 kg. Suppose a parcel's weight is W kilograms, draw a decision table and decision tree to show the calculation of the postage for this parcel". (5)
- Q5. (a) What are the different display devices? Explain CRT and Raster Scan Display. (5)

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- (b) What are the different types of Testing? Briefly explain and differentiate between Black box testing and White box testing? (5)

Unit-III

- Q6. (a) What are the different types of scheduling techniques in process management? (5)
- (b) Differentiate between internal and external commands. Explain with the help of some example. (5)
- Q7. (a) Explain the working of sequential access and direct access methods with the help of example. (5)
- (b) Distinguish between different types of database models. Explain with the help of example. (5)

Unit-IV

- Q8. (a) What are the advantages and disadvantages of asynchronous and synchronous modes of data transmission? (5)
- (b) What do you mean by term internetworking? What are the different types of internetworking devices? (5)
- Q9. (a) What are the Analog and Digital signals? What is the difference between modulation and demodulation? What are the various techniques of modulation in data communication? (5)
- (b) What do you mean by switching? Explain various types of switching techniques? (5)
