

**PROF. G. RAM REDDY CENTRE FOR DISTANCE EDUCATION
PGDCA – I SEMESTER (December, 2014) INTERNAL ASSIGNMENTS**

Paper – I (CS801: Programming Methodology)

I. Answer all the following questions. (Marks: 5*2=10)

1. (a) Describe about all the basic data types, operators and the precedence of the operators in C Language.
(b) (i) Write a program to reverse the digits of a given number.
(ii) Write a program, using getchar, putchar functions.
2. (a) What are the different types of parameter passing methods supported in 'C' ? Give examples.
(b) Give the declaration of a three dimensional array of size 3x4x5 and specify the location in memory of the various elements of an array.
3. (a) What do you understand by a class and object of a class with a programming example.
(b) (i) Describe about different storage classes with examples.
(ii) Write a program to explain the concept of class templates and explain the program. How the concept of class templates are used ?
4. (a) Write short notes on the following :
(b) (i) Write a program to initialize the diagonal elements of an array to '1' and rest of the elements to '2'
(ii) Write a function to find average of given numbers in C++.
5. (a) Explain the difference between public, private and protected inheritance with a programming example.
(b) Describe about following
(i) Operator overloading and multiple Inheritance and write a sample program for each one
(ii) Short note on (i) Templates and (ii) Friend Class

II. Answer all the following Questions. (Marks: 2*5=10)

- 1) (a) Distinguish between an array of pointers and pointers to an array.
(b) Describe about file handling functions with an example.
- 2) (a) What is an inheritance ? Types of inheritance show an example program from each.
(b) (i) What is a function ? What is function overloading ?
(ii) What is an inline function ? What are the advantages and disadvantages of in line functions with an example program.

Paper – II (CS802: Computer Organization)

I. Answer all the following questions. (Marks: 5*2=10)

- 1) a) (i) What are the different instructions of the different groups that are normally implemented in any computer system.
(ii) Discuss about floating point and fixed point representation using example.
b) Differentiate between Hardwired Control and Micro Programmed Control.
- 2) a) Explain the microprogrammed control scheme for design of internal structure of a control unit.

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- b) (i) Draw and explain the block diagram of a Computer with I/O processor. What are the various types of I/O channels ?
(ii) Explain about interactions between CPU and Memory.
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3) Briefly explain the following:

- a) (i) Discuss how CRC logic is implemented (ii) Privileged and Normal instructions
(iii) Half Adder & Full Adder (iv) Horizontal and Vertical format of control word
- b) What are the parallel bus standards ? Explain about I/O Interface (serial and parallel)
- 4) a) Explain about
(i) Asynchronous data transfer (ii) Daisy-Chain Priority Schemes
(iii) Memory interleaving (iv) Memory hierarchy.
- (b) Distinguish between Horizontal and vertical micro instruction formats.
- 5) (a) Explain about the different addressing modes with suitable diagrams
(b) Using the register transfers, explain the execution of instructions in separate cycles.
(c) Explain following terms
(i) I/O Interrupts (ii) Sequence Counter (iii) VDU
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II. Answer all the following Questions

(Marks:2*5=10)

- 1) (a) (i) Discuss about state table and state diagram using suitable example.
(ii) Write short notes on
(i) Parallel bus standards (ii) DAT Storage media
- (b) Write short notes on
(i) CPU Memory interaction (ii) Micro-program Sequence (iii) Cache Memory
- b) Explain how information is recorded on a magnetic tape.
- 2) (a) (i) Explain about asynchronous data transfer (ii) Explain Daisy-Chain priority schemes
(b) (i) Discuss working of DMA based data transfer technique.
(ii) Briefly explain combinational circuits and explain how are designed.
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Paper – III (CS803: IT Foundations)

I. Answer all the following questions.

(Marks: 5*2=10)

- 1) (a) Discuss about CPU, memory and peripheral devices.
(b) Discuss the features of contemporary operating system.
(c) Distinguish between machine language, assembly language and high-level language
2. (a) Distinguish between horizontal and vertical instruction formats
(b) Describe about instruction execution.
- 3) (a) Discuss about the mail merge of MS-Word. Write notes on printer control.
(b) Discuss about functions and macro's of a spread sheet. Differentiate between LOTUS 1-2-3 and MS-Excel.
- 4) (a) Explain the about Internet and World Wide Web.

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(b) List out the differences between LAN, WAN and MAN with examples?

- 5) (a) Explain the function of ISO OSI Seven layered architecture in detail.
(b) Describe various communication equipment.
(c) Write short notes on :
- (i) Instruction formats (ii) E-mail (iii) Reports in database

II. Answer all the following Questions. (Marks:2*5=10)

1. (a) Write notes on Normalization. Discuss how to build relationship between tables.
(b) Discuss about Evolution of Programming Languages? Write about Communication Equipment.
2. (a) Explain about TCP/IP Protocols.
(b) Write short notes on
- (i) Query Languages (ii) Transmission Media (iii) CPU and Memory Devices
(iv) Instruction Formats (v) e-mail (vi) DNS

Paper – IV (CS804: Business Information Systems)

I. Answer all the following Questions. (Marks: 5*2=10)

- 1) (a) Discuss about the four divisions and their sections of COBOL in detail examples. .
(i) Write a COBOL program to find the reverse of a given number
(ii) Discuss about the following verbs with examples.
- (a) String & Unstring (b) COMPUTE (c) Divide
- (b) Write a COBOL program to sort the file sequential order and store on magnetic tape and print the sorted tape as the output of the program.
- 2) (a) Write short notes on the following.
(i) hashing (ii) external sorting (iii) merging sorting (iv) relative file organization
- 3) (a) Explain in detail about Information Systems and SDLC.
(b) Write a COBOL program to read all the records in an indexed sequential file.
- 4) (a) What is meant by information system ? Explain in detail about system development life cycle.
(b) Explain about planning and requirement analysis.
- 5) (a) Explain about input design and processing design with suitable examples.
(b) Discuss about forms and procedures.

II. Answer all the following Questions. (Marks:2*5=10)

- 1) a) What is PERFORM verb in Cobol? Give any four formats of PERFORM verb?
b) Describe about the following
- (i) Sort merge (ii) POCTURE clause (c) VALUE & JUSTIDED Clauses.
- 2) a) What is meant by system analysis ? Explain about feasibility study. Explain about planning and requirement analysis
b) Write short notes on (i) Implementation (ii) Testing (iii) Maintenance

Paper – V (CS805: Operating Systems)

I. Answer all the following Questions. (Marks: 5*2=10)

1. (a) (i) Define operating system. Differentiate between multi-programmed batch system and time-sharing system. Explain features of them.
(ii) What is working set ? Explain how working set theory can be used for controlling thrashing ?

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- (b) (i) Explain MS-DOS system structure and Unix Operating System structure.
(ii) Explain different CPU Scheduling algorithms.
2. (a) (i) What is paging ? Explain the concept of multilevel paging.
(ii) What is context switching ? What are the conditions for critical regions ?
- (b) (i) Define Semaphore. How can we use semaphore to deal with n-process critical section problem.
(ii) Define deadlock, and explain what are the necessary conditions to occur deadlock. Explain the methods of handling deadlocks.
- 3) (a) (i) Explain about monitor as inter process synchronization primitive. Discuss the advantages of its usage
(ii) Differentiate thread and process. Draw and explain process state diagrams.
- (b) (i) Define fragmentation and explain internal and external fragmentation and how to avoid it.
(ii) Distinguish between security and protection. Explain about access matrix and its usage.
- 4) (a) Define shell, kernel and explain user interface in UNIX operating system.
(b) What is a file ? Write the different file attributes, operations, types.
- 5) (a) (i) Differentiate time sharing and real-time systems.
(ii) Explain segmentation with examples.
- (b) (i) Define operating system and explain the functions of operating system.
(ii) What are the goals of operating systems ?

II. Answer all the following Questions.

(Marks:2*5=10)

- 1) (a) (i) Explain the various schedulers used in process scheduling with the help of a queuing diagram representation of process scheduling.
(ii) What is demand paging? Explain multilevel paging. What is thrashing?
- (b) Discuss the criteria useful for comparing different CPU scheduling algorithms.
- 2) (a) Write notes on the following (i) Design principles of UNIX (ii) File System of UNIX.
(b) Write short notes on the following in UNIX.
- (i) Redirection (ii) Pipelines (iii) Filters (iv) Shell Scripts

***Note:**

- 1) Each paper carries 20 marks.
- 2) Submit the answer sheets on or before 8th February, 2015.
- 3) Submission of Assignments compulsory for the both PGDCA - I & II - Semesters. Candidate who have not submitted the assignments their results will not be announced. Prescribed fee for submission of Assignments is Rs. 300/-
- 4) Practical Internal exams are from 14th March & 15th March, 2015.
- 5) The cover page of the assignments must have the following information:

Name : _____	Enrollment Number : <u>94-</u> _____.
Semester : _____	Subject Code : _____
Subject : _____	Date of Submission : _____