1. (a) Discuss the flags of 8086 microprocessor.
   (b) Enlist the salient features of 80286, 80386, and 80486.

Or

2. (a) Draw the functional block diagram of 8086 microprocessor.
   (b) Explain the application of microprocessor.

3. (a) Explain register organization of 8086 & explain typical application of each register.
   (b) Write the advantages of assembly language over machine language.

Or

4. (a) Write short note on subroutine call & return.
   (b) What is MACRO? Explain nested macro with examples.

5. (a) Write short note on memory interfacing.
   (b) What are the various addressing modes of 8051?

Or

6. (a) What is micro-controller? Explain the architecture of 8051 micro-controller.
   (b) Write short note on co-processor.

7. (a) Explain various operating mode of 8254 timer.
   (b) Write short note on type of A/D convertors.

Or

8. Explain the following.
   (a) Single transfer mode.
   (b) Block transfer mode.
   (c) Demand transfer mode.
   (d) Cascade mode.

9. (a) Explain various types of semiconductor.
(b) Write short note on cache memory.

Or

10. Explain the following:
   (a) Main Memory.
   (b) Secondary Memory.
   (c) Cache Memory.
   (d) Magnetic Memory.
7. (a) Explain with the help of block diagram USART (8251).
   (b) Explain the VESA local bus & its pin out diagram.

   Or

8. (a) Explain the block diagram & operation of programmable keyboard/display interface.
   (b) What do you understand by I/O port address decoding?

9. (a) What do you mean by magnetic memory.
   (b) Explain the program memory & data memory.

   Or

10. Explain the following:
   (a) Mask programmed ROM.
   (b) Erasable programmable ROM (EROM).
   (c) PROGRAMMABLE ROMs (PROMs).
   (d) Electrically programmable ROM (EEROMs).

CS-602

Model Test Paper -I

Principles of Programming Languages

Time: 3 Hours
MM: 100

Note: 1. Attempt all questions. Each question carries equal marks.

Q.1 (a) What do you mean by the term Language? Explain its Evaluation Criteria?

   (b) What do you mean by Language Translation? Explain Compiler and Interpreter?

   OR

   (a) Explain Imperative Programming and Logic Programming?
   (b) Explain Syntax? What are Semantics? Explain their Types?
Q.2 (a) What are Data Types? Explain Primitive Data Types?

(b) Explain Binding? Differentiate between Static Binding and Dynamic Binding?

OR

(a) What is an Array? Explain 2 Dimensional Array?
(b) Explain Type Checking? What is type Compatibility?

Q.3 (a) Explain Function Overloading with Example?

(b) Differentiate between Pass By Value and Pass By Reference Parameter Passing Mechanisms?

OR

(a) Explain Operator Loading with Example?
(b) What do you mean by Overloaded Subprograms? Explain the use of Parameters in Subprogram Blocks?

Q.4 (a) What do you mean by Abstract Data Types? Explain Class?

(b) Explain Message Passing? Explain its Techniques?

OR

(a) Explain Abstraction and its Types? Explain Encapsulation?
(b) Explain Threads? Differentiate between Threads and Processes?

Q.5 (a) What are Errors and Exceptions? Explain Exception Handling?

(b) Explain Logic Programming? Give Overview of PROLOG?

OR

(a) Explain Functional Programming Programming Languages? Differentiate Them with Object Oriented Programming Languages?

(b) What are the various Applications of Logic Programming?
Q.1 (a) What do you mean by Run Time Environments? Explain Virtual Machines?

(b) Explain Phases of Operation of Compiler with Example?
Q.1 (a) Explain Object Oriented Programming and Functional Programming?
(b) Explain Analysis Synthesis Model of Compiler? Differentiate between Compiler and Interpreter?

Q.2 (a) Explain User Defined Data Types? Explain Associative Record?
(b) What do you mean by Tokens? Explain Variables and Constants?

OR

(a) Explain Records? Differentiate between Union and Structures?
(b) Explain Control Statements? Classify them?

Q.3 (a) What is Parameter Passing? Explain Parameter Passing Mechanisms?
(b) Explain Overloading? Differentiate between Overloading and Overriding?

OR

(a) What are Generic Subroutines? How they can be Implemented in C++?
(b) What is a Co Routine? How is it Different from Sub Routine?

Q.4 (a) What do you mean by Storage Allocation? Explain Static Allocation?
(b) Explain Semaphores? Define its Types? Explain Monitors?

OR

(a) What do you mean by Garbage Collection?
(b) Explain Object Oriented Programming Paradigms?

Q.5 (a) Explain the use of Try, Catch and Throw Block in Exception Handling?
(b) What are the various Elements of PROLOG? Explain?

OR

(a) What do you mean by Exception Propagation? Explain?
(b) What do you mean by Fourth Generation Languages? Explain?
CS 603
Model Test Paper -I
Software Engineering & Project Management

Time -3 Hrs                                                                 MM-100
Note-Attempt any five question. All question carry equal marks.

1. (A) The RAD model encompasses what phases during the software development? How it is different from linear sequential model?
(B) Differentiate between Software product and software process.

OR

2. (A) Explain Evolutionary Software Process Model and also discuss why Spiral Model is considered as Meta model.
   (B) Discuss Software Maintenance and Its Types.

3. (A) What is Business Processing Engineering? What is importance of Strategies and Planning?
   (B) What is system modeling? How it can be done?

OR

4. (A) Explain Software Prototyping, How it is helpful in requirement gathering? Explain its open end and close end approaches.
   (B) Explain Software Requirement Specification? What are the characteristics good SRS.

5. (A) what do you understand by Data design and what are the principal of data design?
   (B) Write a short note on Architectural Design and also discuss functional Oriented Design?

OR

6. (A) Write a short note on design principals and also explain its designing process and methods?
   (B) Differentiate between DFD, Flowchart and Control Flow Diagram?

7. (A) Explain acceptance testing. Define aloha and beta testing.
   (B) What is domain analysis? What is its purpose and how it is related to a concept of requirement pattern

OR

8. (A) Write a short note on integration testing and what are the various strategies involve in it.
   (B) Write a short note on regression testing?

9. (A) Explain project management concept.
   (B) What are the main objectives of project planning?

OR

10. (A) Explain problem based estimation techniques and also describe empirical estimation model.
    (B) What do you understand by Cost Estimation model, and what is its limitation.

CS 603

Model Test Paper -II

Software Engineering & Project Management

Time -3 Hrs MM-100

Note-Attempt any five question. All question carry equal marks.
1. (A) Briefly describe SDLC and its different model with advantages and Disadvantages. 
   (B) Explain fourth generation technique in software development and also discuss formal 
   method models. 
   
   OR 
   
2. (A) what are the characteristic of Software and also discuss the challenges before 
   software engineering. 
   (B) What is Process Model? Describe the various process models with their advantages 
   and disadvantages. 
   
3. (A) What Is System Engineering explains with its hierarchy? 
   (B) Discuss software Prototyping and its types. 
   OR 
   
4. (A) What is reverse Engineering and how it is different from reengineering? 
   (B) What is system modeling and what are restraining factors in System modeling? 
   
5. (A) What do you understand by structured analysis, what are the specific tools required 
   for structured analysis and how it is better than flowchart. 
   (B) Write a short note on Data Dictionary? 
   OR 
   
6. (A) What do you understand Design and what are the main objectives of Design? 
   (B) Write a short note on Cohesion, Coupling, Modularity and Functional Independence. 
   
7. (A) Describe different black box testing methods. 
   (B) Explain unit testing. What are the common errors find during the unit testing. 
   OR 
   
8. (A) What are system testing and what series of tests are performed during the 
   system testing? 
   (B) Explain object oriented analysis process. 
   
9. (A) what do you understand Software configuration management. What are the 
   tools used for it. 
   (B) What is project planning and what are its objectives and activities involved in it. 
   OR 
   
10. (A) Describe COCOMO model with suitable example. 
    (B) Write a short note on Work Break Down Structure. 
    
CS-604 

Model Test Paper -I 

Computer Networking 

Time -3 Hrs 

MM-100 

Note-Attempt any five question. All question carry equal marks. 

Q.1 (a) Explain OSI reference model and its Benefits?
(b) Write short note on:

(i) REPEATER

(ii) BRIDGE

OR

Q.2 Explain ATM in detail.

Q.3 Write short note on:

(i) Serial line IP

(ii) PPP

OR

Q.4 Difference between the BISYNC and HDLC.

Q.5 One thousand Airline reservation stations are competing for the use of a single slotted ALOHA channel. The average station makes 18 request/hour. A slot is 125 meu.sec. What is the approximate total channel load?

OR

Q.6 Discuss about FDDI. Write its advantages and disadvantages.

Q.7 Explain Leaky bucket algorithm.

OR

Q.8 What is the purpose of CSMA? Explain 1-persistent CSMA.

Q.9 Write the short note on:

(i) HTTP

(ii) FTP

OR

Q.10 What is Cryptography? Also write its types and cryptanalysis.

(CS-604)

Model Test Paper -II

Computer Networking

Time - 3 Hrs

MM-100

Note-Attempt any five question. All question carry equal marks.
Q.1     (a) Explain connection oriented and connectionless services.
        (b) Write short note on:
        (i) Internet
        (ii) Intranet

OR

Q.2     (a) Explain the function of physical and network layers.
        (b) Explain ATM reference model in detail.

Q.3     Explain comparison the BISYNC and HDLC.

OR

Q.4     (a) What is data link layer. Explain HDLC protocol.
        (b) Explain Framing.

Q.5     (a) What is the function of MAC sub layer?
        (b) One thousand airline reservation stations are competing for the use of a single slotted ALOHA channel. The average station makes 18 request/hour. A slot is 125 meu.sec. What is the approximate total channel load?

OR

Q.6.    (a) Write short note on Ethernet.
        (b) Discuss about FDDI. Write its advantages and disadvantages.

Q.7.    (a) Explain Multicast routing in detail.
        (b) Explain IP Addresses.

OR

Q.8     (a) Write the short note on:
        (i) IPV4
        (ii) IPV6
Q.9  Explain digital signature standard. Also explain its process.

OR

Q.10  Write short note on TCP and UDP.
Note: 1. Attempt all questions. Each question carries equal marks.

1. (a) Explain Flynn’s classification.
   (b) Briefly explain multicomputer system.

   Or

   (a). Discuss performance factors vs system attributes.
   (b) Difference between multicomputer and multiprocessor.

2. (a) Write short notes on instruction set
   (b) What are the differences between superscalar and VLIM architecture.

   Or

   (a) Describe memory coherence property in a multilevel memory hierarchy
   (b) Discuss inclusion property.

3. (a) What is pipelining? Explain in detail the linear pipeline and its characteristics.
   (b) Discuss latency analysis for dynamic pipeline.

   Or

   (a) What do you mean by instruction pipeline conflict? Explain in short.
   (b) Prove that a k-stage linear pipeline can be at most k-times faster than that of a non-pipelined serial processor.

4. (a) What do you mean by cache coherence problem? Explain with an example.

   Or

   (b) Differentiate between write-through and write-back cache.
   (c) Explain the characteristics of vector processing.
   (d) Describe multithreaded architecture and its computation model.

5. Explain the following termin data-parallel model

   (i) Data parallelism
(ii) Array language extensions

(iii) Compiler support

Or

(a) Describe architecture difference between RISC & CISC.

(b) Explain back plane bus specification.
Note: 1. Attempt all questions. Each question carries equal marks.

1.  (a) Explain Static interconnection networking SIMD computer with different network topologies.
(b) Explain crossbar switch organization for interconnection of multiprocessors.

OR

(a) Explain and draw the organization of multiprocessor memory.
(b) Explain the FINGS and Handler classification.

2.  (a) What is arbitration? Explain arbitration scheme using independent request and Grants, distributed arbitration.
(b) Explain interleaved memory organization. How does it provide pipelined access of the parallel memory modules.

OR

(c) Explain Backplane Bus system briefly.
(d) Distinguish between scalar RISC and superscalar RISC in term of instruction issue, pipeline, architecture.

3.  (a) Explain why superpipelined processor performs less effectively than a superscalar processor of small degree
(b) What is linear pipeline processor? Discuss its different models.

OR

(a) Describe the necessary condition for the hazards.
(b) Consider the following pipeline reservation table.

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4. (a) Explain multithreading issues and solution briefly.
(b) Compare distributed memory model and shared memory model.

OR

(a) Explain the following terms associated with multicomputer networks and message passing mechanism.

(b) Describe snoopy bus protocol to cache coherence problem.

5. (a) Explain functional and logical model of parallel computer.
(b) Discuss the various semantic issues in parallel programming? How it can resolved.

OR

(a) Write short notes on.
(i) Elementary parallel operation
(ii) Parallel matrix multiplication
(iii) Software tool and environment.
(iv) Features of parallel language.