

**ANNEXURE I**  
**COMPUTER SCIENCE AND ENGINEERING**

**1. Digital Electronics:** Logic Families: TTL, ECL, MOS – Logic gates AND, OR, NOT, NOR, NAND and XOR – Boolean Expressions – K-map – Combinational Circuits – Flip-flops – registers – Counters – decoders, multiplexers and semiconductor memories.

**2. Microprocessors:** 8086 microprocessor – architecture, segmentation concepts – register organization – addressing modes – instruction set – preliminary features of 80286, 80386 and 80486

**3. Computer Organization:** Functional blocks of CPU – Fixed point, floating point number representations – instructions – addressing modes – stored program concept – instruction execution – memory hierarchy – virtual memory, associative memory – cache memory – I/O organization – methods of data transfer – programmed I/O, DMA, Interrupts – IOP

**4. C and Data Structures:** Data types, storage classes, operators and expressions – control statements – functions, parameter passing, Call by value, Call by reference – arrays, strings, pointers, structures, unions – type definitions – pre processor statements – files – Data Structures – Linked Lists – queues and stacks – trees, binary trees – sorting : bubble, selection, insertion, quick and merge sorts -Searching : linear and binary search techniques

**5. Computer Networks:** OSI reference model, TCP/IP reference model- Classification of networks – Network topologies : Bus, Ring, Star, Mesh, Hybrid – LAN components – Coaxial, twisted pair, optical fiber cables and connectors – repeaters, hubs, switches, NIC – Ethernet, token bus, token ring, inter network packet exchange/sequenced packet exchange – HTTP, FTP, SMTP, Telnet – TCP/IP addressing scheme – IP address classes - sub netting

**6. Operating Systems:** Windows : advantages, features, hardware requirements, various menus and tool bars – operating system services – process management – CPU scheduling algorithms – deadlocks – memory management – overlays, paging, segmentation, virtual memory, page replacement algorithms – disk scheduling – free space management – disk scheduling algorithms

**7. RDBMS:** Need of database systems, data independence, Data models, E-R model – structure of relational database – normal Forms : 1st, 2<sup>nd</sup> and 3rd – SQL – data types, operators, DDL, DML and DCL commands – views, sequences, synonyms, indexes and clusters – PL/SQL – data types, control structures, cursor management, exceptions, functions, triggers, procedures and packages

**8. Object Oriented Programming Through C++:** Concept of OOPs – classes and objects – Constructors and destructors – arrays, pointers, references, inline functions – function overloading and operator overloading – inheritance – virtual functions – friend functions – this pointer – i/o manipulators – file and i/o functions

**9. Java Programming:** Java – data types, variables, operators, arrays – Classes and objects – methods – constructors – overloading – inheritance - Visibility mode – packages – interfaces – multithreading – exception handling – applets

**10. Internet Programming & ADO.net :** Internet fundamentals – HTML, tags, attributes, formatting text – PHP- Loops, Strings, Statements, Arrays, Functions, Databases, Cookies, Sessions, Debugging. ADO.net-Data adapters, Data sets, Connection objects and Command objects.

**ANNEXURE II**  
**Number of questions to be set unit wise (Total 100)**  
**COMPUTER SCIENCE AND ENGINEERING**

<b>Unit No</b>	<b>Topic</b>	<b>Weightage_Marks</b>
<b>1</b>	<b>Digital Electronics</b>	<b>08</b>
<b>2</b>	<b>Microprocessors</b>	<b>10</b>
<b>3</b>	<b>Computer Organization</b>	<b>10</b>
<b>4</b>	<b>C and Data Structures</b>	<b>10</b>
<b>5</b>	<b>Computer Networks</b>	<b>10</b>
<b>6</b>	<b>Operating Systems</b>	<b>12</b>
<b>7</b>	<b>RDBMS</b>	<b>10</b>
<b>8</b>	<b>Object Oriented Programming through C++</b>	<b>10</b>
<b>9</b>	<b>Java Programming</b>	<b>10</b>
<b>10</b>	<b>Internet Programming &amp; ADO.net</b>	<b>10</b>

**ANNEXURE III**  
**MODEL QUESTIONS FOR COMPUTER SCIENCE AND ENGINEERING**

1. In a circular linked list, the insertion of a record involves modification of
  1. 3 pointers
  2. 4 pointers
  3. 2 pointers
  4. No pointers
2. Which of the following layer of OSI reference model deals with end to end communication
  1. Presentation layer
  2. Session layer
  3. Network layer
  4. Transport layer
3. Which of the following statements are true regarding java applet  
**Statement I** : An applet can be trusted always  
**Statement II**: An applet must be executed using browser  
**Statement III**: An applet is not able to access the files of the computer in which it runs.
  1. Statement I & II
  2. Statement I & III
  3. Statement II & III
  4. All of the above