

III B. Tech I Semester (R09) Regular Examinations, November 2011

PRINCIPLES OF PROGRAMMING LANGUAGES

(Common to Electronics & Computer Engineering & Computer Science Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Write the BNF notation for the syntax of following constructs in C++.
i. for loop. ii. If -else condition. iii. Structure definition.
(b) Explain about de notational and axiomatic semantics.
- 2 Explain three general methods for implementing a programming language
- 3 (a) Consider the following C program:


```
void fun(void) {
  int a,b,c; /* definition 1*/
  -----
  While (...){
  int b,c,d; /*definition 2*/
  ..... ←-----1
  While (.....) {
  int c,d,e; /* definition 3*/
  ..... ←-----2
  }
  .....←-----3
  }
  ..... ←-----4
  }
}
```

for each of the four marked points in this function, list each visible variable, along with the number of the definition statement that defines it.
- (b) What are advantages and disadvantages of dynamic scoping?
- 4 (a) What is unconditional branching? Explain the problems with unconditional branching.
(b) Describe the three situations where a combined counting and logical looping construct is needed.
- 5 (a) Mention the similarities between Haskell and ML.
(b) Explain with an example, the where clause using Haskell.
- 6 Discuss the design issues of exception handling.
- 7 Explain in detail abstract data types in Java with examples?
- 8 (a) Define subprogram. What are the distinct categories of subprograms?
(b) Explain with examples how local variables are passed as function arguments.

Code: 9A05501

2

III B. Tech I Semester (R09) Regular Examinations, November 2011

PRINCIPLES OF PROGRAMMING LANGUAGES

(Common to Electronics & Computer Engineering & Computer Science Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Compute the weakest precondition for each of the following assignment statements and their post conditions.
(i) $a = 2 * (b - 1) - 1 \{ a > 0 \}$ (ii) $b = (c + 10) / 3 \{ b > 6 \}$
(b) Describe EBNF with examples.
- 2 (a) Discuss in detail about the lists and list operations with respect to Meta Language.
(b) Define inheritance. Explain multiple inheritance technique using python language.
- 3 (a) What is the disadvantage of having too many features in a language?
(b) In what language is UNIX written?
(c) What is linker? Explain.
- 4 (a) Explain type Inference of ML Language.
(b) Explain dynamic type binding.
- 5 (a) Explain basic concepts of exception handling.
(b) Write design issues of Exception handling.
- 6 (a) What is short circuit evaluation? Explain with suitable examples.
(b) What are issues involved in providing mixed mode assignments? Explain with examples.
(c) Write notes on operator evaluation order.
- 7 What are sub programs? What are the advantages of sub programs? Explain about different methods of parameter passing mechanisms to a sub program.
- 8 Explain about threads in Java and C #.

Code: 9A05501

3

III B. Tech I Semester (R09) Regular Examinations, November 2011

PRINCIPLES OF PROGRAMMING LANGUAGES

(Common to Electronics & Computer Engineering & Computer Science Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 What is a monitor? Explain usage of monitors with example in concurrent pascal to implement cooperation synchronization.
- 2 (a) With neat diagram explain the layered interface of virtual computers provided by a typical computer system.
(b) Explain fetch execute cycle with an algorithm.
- 3 (a) Explain exception handling in ML.
(b) Distinguish between checked and unchecked exceptions.
- 4 Explain the process of computation of attribute values of attribute grammar with example
- 5 (a) What are design issues of pointers? Explain.
(b) What is named constant? What are the advantages of named constants?
- 6 (a) What are general characteristics of subprograms?
(b) Explain in detail different components of a subprogram?
(c) Clearly explain the two categories of subprograms?
- 7 (a) What is the role of parentheses with relate to precedence of operators.
(b) Explain conditional expression of C language.
- 8 (a) Explain in detail about the characteristics of scripting languages.
(b) Discuss in detail about the python primitive types.

Code: 9A05501

4

III B. Tech I Semester (R09) Regular Examinations, November 2011

PRINCIPLES OF PROGRAMMING LANGUAGES

(Common to Electronics & Computer Engineering & Computer Science Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Discuss in detail about the different data structures that are present in LISP with suitable examples.
(b) Give brief description about the dialects of LISP.
- 2 (a) Explain operator precedence grammar with an example.
(b) Explain the concept of associativity of operators.
- 3 (a) Explain the importance of operand evaluation order.
(b) What is operator overloading? Explain operator overloading in different languages?
- 4 Explain in detail about language evaluation criteria?
- 5 Explain the following terms:
(a) process Synchronization (b) race condition
(c) binary semaphores (d) MIMD
- 6 (a) Explain various primitive data types with suitable examples.
(b) Define ordinal, enumeration and subrange types.
- 7 (a) Explain design issues of functions.
(b) Explain user defined over loaded operators.
- 8 Explain in detail the basic elements of Prolog.

Code: 9A05502

III B.Tech I Semester (R09) Regular Examinations, November 2011

SOFTWARE ENGINEERING

(Common to Computer Science & Systems Engineering, Information Technology & computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 What are the characteristics of software engineering? Discuss role of software in current world.
- 2 What are the different types of prescriptive process models? Explain the evolutionary process model?
- 3 (a) How to make stakeholders to understand the requirements model?
(b) What are the elements of requirements model?
- 4 What is software architecture? Explain different types of architectural styles?
- 5 Explain how to design class-based components. Explain its basic design principle.
- 6 (a) Differentiate between verification and validation.
(b) Discuss briefly about orthogonal array testing.
- 7 (a) What is risk identification? Explain in detail.
(b) What is risk protection? Explain in detail.
- 8 Define SQA. Explain SQA tasks, goal and metrics.

Code: 9A05502

III B.Tech I Semester (R09) Regular Examinations, November 2011

SOFTWARE ENGINEERING

(Common to Computer Science & Systems Engineering, Information Technology & computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 What is software process assessment and improvement? Explain different approaches proposed for the past few decades.
- 2 (a) What is risk analysis? Explain the spiral model.
(b) How spiral model differ from other models.
- 3 What are the different types of data modeling concepts? Explain each in detail.
- 4 (a) Define abstraction. Explain different levels of abstraction.
(b) Explain the data abstraction and procedural abstraction with help of example.
- 5 Discuss how to design traditional components. Explain graphical design notation and tabular design notation.
- 6 Explain the following:
 - a) Smoke testing.
 - b) Regression testing.
 - c) Alpha and Beta testing.
 - d) Stress testing.
- 7 (a) What is risk refinement?
(b) Explain in detail about RMMM plan.
- 8 What is quality? Explain Garvin's Quality dimensions.

Code: 9A05502

III B.Tech I Semester (R09) Regular Examinations, November 2011

SOFTWARE ENGINEERING

(Common to Computer Science & Systems Engineering, Information Technology & computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 What is CMMI? Explain the different CMM levels in detail.
- 2 What are the software requirements? Explain the functional and non-functional requirements. User requirements and system requirements.
- 3 (a) What are the various goals in requirement analysis and communication techniques?
(b) What are the different approaches have been proposed in requirement elicitation?
- 4 Discuss briefly about software quality guidelines and its attributes.
- 5 Explain interface design principles and guidelines.
- 6 What is software measurement? Explain in detail about LOC and FP metrics.
- 7 (a) What are the metrics of software?
(b) What is RMMM? Explain the RMMM plan.
- 8 How to calculate user satisfaction? Explain MC call's quality factors.

Code: 9A05502

III B.Tech I Semester (R09) Regular Examinations, November 2011

SOFTWARE ENGINEERING

(Common to Computer Science & Systems Engineering, Information Technology & computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 What are the principles proposed by David Hooker? How that principles focus on software engineering practice?
- 2 (a) Define a software process framework activity with a neat diagram.
(b) Explain the iterative process flow and parallel process flow.
- 3 What are the different approaches have been proposed in requirement elicitation?
- 4 Discuss briefly how to translate requirements model in design model. Explain with neat diagram.
- 5 What are the golden rules of user interface design? Explain each one in detail.
- 6 Define quality? Explain the different types of testing in detail.
- 7 What is statical testing? Explain the different measures of software quality?
- 8 What is review? Explain the defect amplification and removal review.

Code: 9A05503

1

III B. Tech I Semester (R09) Regular Examinations, November 2011

COMPUTER GRAPHICS

(Common to Electronics & Computer Engineering & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Write a short notes on:
 - a) Cathode – Ray Tube.
 - b) Vector scans display.
 - c) Raster scans display.

- 2 (a) What are Graphic primitives? Mention some typical graphic primitives that a package may provide.
(b) What is inside test? Explain the two methods for finding out a pixel is inside the polygon or outside the polygon.

- 3 What is parallel projection? Derive a transformation matrix for parallel projection.

- 4 Discuss about attribute handling in hierarchy with an example.

- 5 (a) Describe any two color models used in computer graphics.
(b) Explain half toning technique.

- 6 Explain how a polygon is represented in a computer memory.

- 7 (a) Explain in detail about spatial occupancy enumeration scheme for solid modeling.
(b) State and explain the properties of CSG scheme.

- 8 (a) Discuss the problems with Interpolated Shading.
(b) What is meant by texture mapping? Explain it.

Code: 9A05503

2

III B. Tech I Semester (R09) Regular Examinations, November 2011

COMPUTER GRAPHICS

(Common to Electronics & Computer Engineering & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions

All questions carry equal marks

- 1 Scan convert a line from (1, 2) and (8, 4) using simple DDA symmetrical DDA and Bresenham algorithm and comment on the performances.
- 2 Write about valuator devices and choice devices and explain in which context these two devices can be used.
- 3 (a) Write in detail on vector refresh displays.
(b) Explain the working principle of a printer.
- 4 (a) Show how shear transformations expressed in terms of rotation and scaling.
(b) Give the transformation matrix for parallel and isometric projection.
- 5 (a) Explain briefly about super ellipsoid.
(b) Write a short note on Bezier curves.
- 6 Write notes on any three user interfaces of solid modeling system.
- 7 Write notes on YIQ color model.
- 8 Write notes on the following:
 - a) Polygon mesh shading.
 - b) Gouraud shading.
 - c) Phong shading.

Code: 9A05503

3

III B. Tech I Semester (R09) Regular Examinations, November 2011

COMPUTER GRAPHICS

(Common to Electronics & Computer Engineering & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Discuss different implementations in text drawing graphics package.
(b) Elaborate on types of devices in SRGP.
- 2 (a) Draw the flow-diagram or a brief step-wise procedure for implementing Sutherland-Hodgeman algorithm.
(b) Consider a Convex polygon with 'n' vertices being clipping against a clip rectangle. What is the maximum number of vertices in the resulting clipped window?
- 3 Determine the form of the transformation matrix for a reflection about an arbitrary line with equation $y=mx +c$.
- 4 Explain how 3-D curves and surfaces are displayed on a computer screen.
- 5 Explain in detail the bottom-up construction of the robot.
- 6 (a) Write notes on boundary representation of solid objects.
(b) Explain how octrees are used to model solid objects.
- 7 Explain the different methods for producing color display with a CRT.
- 8 (a) Describe in detail the Gouraud shading algorithm. Also state its advantages over the Phong's shading algorithm.
(b) Explain shadow masking method for colour monitor

III B. Tech I Semester (R09) Regular Examinations, November 2011

COMPUTER GRAPHICS

(Common to Electronics & Computer Engineering & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Write and explain to implement an algorithm to clip an ellipse against a rectangular window.
- 2 (a) What is half toning? Distinguish between antialiasing and half toning.
(b) How the size of frame buffer and resolution are related?
- 3 (a) Write a 2*2 transformation matrix for each of the following rotations about the origin.
(b) Counter clockwise by π .
- 4 What are parametric cubic curves? Explain them with example.
- 5 (a) What is the difference between wire-frame model and solid model? Explain the advantages and disadvantages of one over other.
(b) Write notes on cell decomposition.
- 6 Explain the concept of chromatic color in detail.
- 7 Discuss about the following viewing parameters:
1) Synthetic camera.
2) View port.
3) View table.
- 8 (a) Write a note on rendering pipeline for z-buffer and gouraud shading.
(b) Explain the sub structuring process.

III B. Tech I Semester (R09) Regular Examinations, November 2011
COMPILER DESIGN
 (Computer Science Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
 All questions carry equal marks

- 1 (a) Discuss in detail about construction of parsing tables.
 (b) Give the parse tree for the following while statement. while $A > B \& A \leq 2 * B - 5$ do $A := A + B$.
- 2 (a) Explain the input buffer scheme for scanning the source program. How the use of sentinels can improve its performance? Describe in detail.
 (b) Describe about lexical errors and various error recovery strategies with various examples.
- 3 Consider the grammar: $S \rightarrow AS/b$
 $A \rightarrow SA/a$
 Construct DFA whose states are the canonical collection of LR (0) items.
- 4 (a) Give examples of static checkers.
 (b) Describe about type checking of expressions.
- 5 Explain in detail the implementation of a simple stack - allocation scheme.
- 6 Consider the following program:


```
main()
{
    for( j=2; j<=n; j++)
        a[j]=1;
    count=0;
    for(j=2; j<=n**0.5;j++)
        if(a[j])
        {
            count++;
            for(k=2*j;j<=n;k=k+j)
                a[k]=0;
        }
    Printf ("%d", count);
}
```

 (a) Construct the flow graph.
 (b) For the flow graph, indicate the back edges and their natural loops.
- 7 Explain how the following techniques help code optimization:
 - a) Code Motion
 - b) Strength Reduction
- 8 (a) What is a basic block? With suitable example –discuss various transformations on the basic block.
 (b) Explain the concept of Register allocation and assignment.

Code: 9A05504

2

III B. Tech I Semester (R09) Regular Examinations, November 2011

COMPILER DESIGN
(Computer Science Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Explain different phases of computer.
(b) Differentiate between computer and interpreter.
- 2 (a) Explain about error recovery in predictive parsing.
(b) Explain in detail about the elimination of ambiguity in grammar.
- 3 (a) Write algorithm for the operator precedence parsing.
(b) Discuss in detail about LR parser.
- 4 (a) Give syntax directed definition for data type i.e.: int or real followed by the list of identifiers.
(b) Also, give the parse tree with inherited attributes in each node.
- 5 (a) What are the problems with implementing dynamic memory allocation in a Compiled language?
(b) Give a structure of a symbol table for the following 3 dimensional array.
ARRAY (-10; 20, N:M, O:M+L).
- 6 (a) How do you represent an equation using DAG $a = b * -c + b * -c$? What is the purpose of DAG?
(b) How do you calculate the cost of an instruction? Explain with example.
- 7 Write about Data flow analysis of structural programs.
- 8 (a) What are the issues in code generation process? Explain in detail.
(b) Explain the mechanism for translating 'printf' function in C.

III B. Tech I Semester (R09) Regular Examinations, November 2011
COMPILER DESIGN
(Computer Science Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Write algorithm for non recursive predictive parsing and give method for the construction of predictive parsing table.
- 2 (a) Write a LEX program that copies a file, replacing each on null sequence of white space by a single blank.
(b) Describe the language denoted by regular expression $0^*10^*10^*10^*$.
- 3 Consider the following grammar:
 $E' \rightarrow E$
 $E \rightarrow E+T|T$
 $T \rightarrow T*F|F$
 $F \rightarrow (E)|id$
Find the collection of sets of LR (0) items.
- 4 (a) Explain in detail how an L-attributed grammar can be converted into a translate scheme.
(b) Give the translate scheme to convert an expression grammar into three address code.
- 5 (a) Draw the diagram of general activation record and give the purpose of any two fields.
(b) Explain the limitations of static allocation.
- 6 Discuss the different code optimization techniques.
- 7 Write about Data flow analysis of structural programs.
- 8 What is a Simple Code Generator? Write Code-generation algorithm with the function GETREG.

Code: 9A05504

4

III B. Tech I Semester (R09) Regular Examinations, November 2011

COMPILER DESIGN

(Computer Science Engineering)

Time: 3 hours

Max Marks:70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) With necessary error recovery actions explain in detail the role of lexical analyzer.
(b) What is a compiler and explain the various phases of compiler with neat sketch?
- 2 (a) Verify whether the following grammar is LL (1) or not.
(b) Find the FIRST and FOLLOW sets of each of the following non-terminals for the following grammar:
$$S \rightarrow aAB|bA|\epsilon$$
$$A \rightarrow aAb|\epsilon$$
$$B \rightarrow bB|c$$
- 3 Consider the following grammar:
$$S \rightarrow AS|b$$
$$A \rightarrow SA|a$$
- 4 Write type expression for the following types:
a) An array of pointers to real, where the array index ranges from 1 to 100.
b) A two dimensional array of integers (i.e. an array of arrays) whose rows are indexed from 0 to 9 and whose columns are indexed from -10 to 10.
- 5 Explain how basic block, DAG and labeled tree are used in compiler construction.
- 6 Write note on structure based Data-flow analysis.
- 7 (a) Differentiate local optimization and loop optimization.
(b) What happen if the code optimization phase is not present in compiler? Explain.
- 8 Write notes on the following:
a) Call by Value.
b) Call by Reference.
c) Call by Name.

Code: 9A05505

1

III B. Tech I Semester (R09) Regular Examinations, November 2011

OPERATING SYSTEMS

(Common to Information Technology, Electronics & Computer Engineering & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Give a brief note on the operating system structure.
(b) Explain operating-system generation.
- 2 (a) What is the purpose of PCB? Explain various pieces of information contained in PCB.
(b) What is meant by 'convoy effect' in the context of FCFS scheduling algorithm? Explain with an example.
- 3 (a) Solve dining-philosophers problem using monitors.
(b) Give the definition of Swap () instruction.
- 4 (a) Explain the concept of swapping.
(b) Discuss LRU Page replacement algorithm.
- 5 Consider the deadlock situation that could occur in the dining philosopher's problem when the philosophers obtain the chopsticks one at a time. Discuss the four conditions for deadlocks indeed hold in the setting. Discuss how deadlocks could be avoided by eliminating any one of the four conditions.
- 6 Explain different allocation methods for disk space.
- 7 (a) Where should be the I/O functionality implemented in the device hardware, in the device driver or in the application software? Explain.
(b) Explain the following terms with respect to disk:
(i) Seek time (ii) Rotational latency (iii) Bandwidth
- 8 Compare symmetric and asymmetric encryption algorithms

III B. Tech I Semester (R09) Regular Examinations, November 2011

OPERATING SYSTEMS

(Common to Information Technology, Electronics & Computer Engineering & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Explain in detail various hardware-based solutions to the critical-section problem.
- 2 (a) Define the following:
 - (i) Job pool.
 - (ii) Job scheduling.
 - (iii) CPU scheduling.(b) List five services provided by an operating system that are designed to make it more convenient for users to use the computer system. In what cases it would be impossible for user-level programs to provide these services. Explain.
- 3 (a) Explain the concept of process scheduling with the aid of a queueing diagram.
(b) What are the circumstances under which the CPU-scheduling decisions take place?
- 4 (a) What is meant by relocation? Give the necessary hardware for implementing dynamic relocation and explain.
(b) Explain FIFO page replacement algorithm with an example.
- 5 Explain Banker's algorithm for deadlock avoidance with an example.
- 6 How file systems are implemented in Linux and windows?
- 7 Discuss in detail the services provided by the kernel related to I/O.
- 8 Explain program related threats.

III B. Tech I Semester (R09) Regular Examinations, November 2011

OPERATING SYSTEMS

(Common to Information Technology, Electronics & Computer Engineering & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Discuss in detail distributed systems.
(b) Explain the system calls used in file management.
- 2 What are the benefits and disadvantages of the each of the following? Consider both the system level and the programmer level:
(a) Synchronous and asynchronous communication.
(b) Automatic and explicit buffering.
(c) Send by copy and send by reference.
(d) Fixed-sized and variable-sized messages.
- 3 (a) What is a semaphore? Explain the usage and implementation of semaphores.
(b) What are the drawbacks of log-based recovery?
- 4 (a) Why are segmentation and paging sometimes combined into one scheme?
(b) Discuss situations under which the most frequently used page replacement algorithm generates fewer page faults than the least recently used page replacement algorithm. Also discuss under what circumstance the opposite holds.
- 5 Discuss the methods for handling deadlocks.
- 6 What are the structures and operations that are used to implement file system operations?
- 7 Give a detailed note on RAID levels.
- 8 How access matrix can be used for providing protection?

III B. Tech I Semester (R09) Regular Examinations, November 2011
OPERATING SYSTEMS

(Common to Information Technology, Electronics & Computer Engineering & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Discuss in detail the functions provided by the operating system.
- 2 (a) Describe the actions taken by a thread library to context switch between user-level threads.
(b) What are independent processes and cooperating processes? What are the reasons for process cooperation?
- 3 (a) What is meant by busy waiting? Modify the semaphore operations to overcome the need for busy waiting.
(b) Show that the timestamp-based protocol ensures conflict serializability.
- 4 (a) Why is it that the size of the page is typically a power of 2?
(b) Explain the different hardware implementations of page table.
- 5 Explain with an example Banker's algorithm for deadlock avoidance.
- 6 What is mounting of a file system, how mounting takes place in different operating systems? Explain with examples.
- 7 (a) With a neat diagram explain interrupt driven I/O in detail.
(b) Explain the following terms with respect to a magnetic disk.
 - (i) Transfer rate.
 - (ii) Random access time.
 - (iii) Head crash.
- 8 Explain how Operating System provides security.

Code: 9A05506

III B. Tech I Semester (R09) Regular Examinations, November 2011
COMPUTER NETWORKS

(Common to Information Technology & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) What factors should be considered while designing the transmission media?
(b) List the differences between connection less communication and connection oriented communication.
- 2 (a) Explain sequence numbering of frames in sliding window flow control mechanism.
(b) A channel has a bit rate of 4Kbps and propagation delay of 20m sec. For what range of frame size does stop & wait gives an efficiency of atleast 50percent.
- 3 (a) Explain the token ring operation.
(b) State the advantages & disadvantages of FDDI.
- 4 (a) Why under computer user dynamic solution? Explain with example how distance vector routing is used to route the packet and why count to infinity problem arises & how does it get solved.
(b) Under what conditions adaptive routing is preferred.
- 5 (a) Explain about concatenated virtual links.
(b) What is meant by tunneling explain.
- 6 (a) Explain connection management issues in transport layers.
(b) Write short notes on:
(i) RPC.
(ii) Crash recovery
- 7 (a) What is scheduling? Discuss various techniques of queuing method.
(b) Explain band width scaling in RTCP.
- 8 (a) What are the security issues in common networks? Discuss the public key algorithm.
(b) Explain in brief substitution ciphers & transposition cipher.

Code: 9A05506

III B. Tech I Semester (R09) Regular Examinations, November 2011
COMPUTER NETWORKS

(Common to Information Technology & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) What are the reasons for using layered protocols in communication networks?
(b) Explain the characteristics of transmission line.
- 2 (a) What are the various ARC retransmission strategies?
(b) What is protocol performance? Derive the relation for protocol performance for sliding window protocol mechanism.
- 3 (a) Compare 802.5 & FDDI.
(b) Explain CSMA/CD operation.
- 4 (a) What are the functions of network layer?
(b) Why leaky bucket algorithm should allowedly 1packet for tick independent of how large the packet is?
- 5 (a) Explain inter network routine.
(b) How networks can be consulted? Explain
- 6 (a) Explain connection management issues at transport layer.
(b) Explain how TCP connections are established using the three way handshakes.
- 7 (a) What is DNS? What resource records are associated with it?
(b) What are the security issues in communication network? Discuss the public key algorithm.
- 8 Write short notes on any two of the following:
(i) Digital signature.
(ii) Cryptography.
(iii) Public key algorithm.

Code: 9A05506

III B. Tech I Semester (R09) Regular Examinations, November 2011
COMPUTER NETWORKS

(Common to Information Technology & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) What are service primitives? Explain with example.
(b) Explain the following media:
(i) STP (ii) UTP (iii) Co axial.
- 2 (a) Why framing of the bit stream is necessary? Explain different framing techniques with examples.
(b) Give the frame format of HDLC data link protocol.
- 3 (a) Explain the frame format of
(i) IEEE802.3 (ii) FDDL
(b) What is bridge & explain its architecture?
- 4 (a) Compare virtual circuit and datagram.
(b) List & explain the primary function of address resolution protocol.
- 5 (a) Explain the different types of IPV6 header format.
(b) Explain the features of network layers in the Internet.
- 6 (a) What is socket? Explain the steps followed in socket programming.
(b) Give an example of transport layer in public network & strategy used in the transport layer for getting recovery from IMP & host crashes.
- 7 (a) With the help of suitable diagram show the components of SNMP management model. Discuss the function of each block.
(b) Write short notes on:
(i) TELNET (ii) DNS.
- 8 (a) What is cryptography? Explain in brief substitute on cipher & transposition explains.
(b) What is policing? Give criteria for policing.

Code: 9A05506

III B. Tech I Semester (R09) Regular Examinations, November 2011
COMPUTER NETWORKS

(Common to Information Technology & Computer Science & Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) Suggest various network topologies for:
(i) Broad cast network (ii) Point to point network. List their advantages & disadvantages.
(b) What are the different transmission medium used in communication? Explain any two.
- 2 (a) Explain the two basic approaches. Go-Back-send selective repeat.
(b) A 100-Km long cable runs at T1 data rate. The propagation speed in the cable is 2/3 the speed of digit. How many bits fit in the cable?
- 3 (a) Draw & explain LLC frame format.
(b) What is MAC sublayer? State its position in layered architecture.
- 4 (a) What is fragmentation? Explain how it is supported in IP_{v4} & IP_{v6}.
(b) What is shortest path algorithm? Explain different shortest path algorithm.
- 5 (a) Explain any two Internet control protocols.
(b) Given an IP address, how will you extract its netid & hostid?
- 6 (a) Define a term silly window syndrome & possible solution to overcome its effects.
(b) What is TCP & UDP? Explain how you will choose between TCP & UDP. Compare them.
- 7 (a) Why network security is is needed? Explain RSA algorithm.
(b) Explain FTP.
- 8 Write short notes on any two of the following:
(i) Symmetric key algorithm.
(ii) Digital signature.
(iii) Network security issue.
