G 5032
(Pages : 2)
Reg. No.................................
Name...................................

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering

PC AND PC BASED SYSTEMS (R)

(Improvement/Supplementary/Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions briefly.
Each question carries 4 marks.

1. What are the essential functions of a processor ?

2. Describe the different types of connectors used in a PC.

3. Explain the principle of magnetic recording and reproduction.

4. What is logical block addressing ? What are its applications ?

5. Compare and contrast CD and floppy disks.

6. What is RAID ? What are its applications ?

7. With neat figures explain the read and write operations in a static memory cell.

8. What is cache miss ? Suggest methods to reduce the same.

9. Explain with neat diagram, the asynchronous handshaking method to read a word from memory and receive it in an I/O device.

10. What is bus arbitration ? Explain its classification.

$(10 \times 4 = 40 \text{ marks})$

Part B

Answer any **one** *full question from each module.*
Each full question carries 12 marks.

MODULE 1

11. List all the add-on cards essentially required in a general purpose PC. What are their functions ?

Or

12. With neat diagrams and waveforms, describe the working of SMPS used in a PC. What are its merits and demerits compared to linear power supply ?

Turn over

MODULE 2

13. Explain how a data is stored and read from a floppy disk. How the disk is formatted and partitioned ?

Or

14. Explain DMA and programmed data transfer schemes. Compare and contrast their performance.

MODULE 3

15. Explain the constructional details of DVD. Describe how the read and write operations done.

Or

16. What is the principle of Holographic storage of data ? How the data is read and written ? Compare it with magnetic storage.

MODULE 4

17. Explain the address translation from virtual address to physical address in a segmented memory system. What are the additional address bits required in such a translation ? How does a TLB improves the speed of address translation ?

Or

18. (a) With neat diagrams, explain how read and write operations takes place in a 2k × 1 RAM chip.

(6 marks)

(b) What is cache coherance ? Explain any one cache coherence method used.   (6 marks)

MODULE 5

19. Explain in detail the architecture of PCI and PCMCIA.

Or

20. Describe how the keyboard and mouse are interfaced with the PC.

[5 × 12 = 60 marks]

G 5052

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering

PROJECT MANAGEMENT AND QUALITY ASSURANCE (R)

(Supplementary/Improvement/Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

Part A

Part A is Compulsory.
All questions carry equal marks.

Explain :

1. Project development cycle.

2. Types of markets.

3. Project control system.

4. Quality circle.

5. Sample size.

(5 × 4 = 20 marks)

Part B

Each question carries 20 marks.

1. (a) Explain the different phases of capital budgeting.

Or

   (b) Explain the 7-s of project management.

2. (a) Explain the methods of financial analysis of a project.

Or

   (b) Discuss the methodology of social cost benefit analysis. Explain with a case study.

3. (a) Discuss Project management information systems. Draw a block diagram to explain its features. Explain the flow of information using a flowchart.

Or

   (b) What are the behavioural issues in Project Management ? Explain.

4. (a) Explain total productive maintenance, with examples.

Or

   (b) Discuss the various possible errors in samplings.

(4 × 20 = 80 marks)

G 5061   (Pages : 2)   Reg. No................................

Name....................................

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch—Computer Science and Engineering/Information Technology

COMPUTER NETWORKS (R, T)

(Improvement/Supplementary/Mercy Chance)

Time : Three Hours   Maximum : 100 Marks

Part A

Answer all questions briefly.
Each question carries 4 marks.

1. Distinguish between bridges and routers.

2. Explain a protocol in the router level in the OSI model.

3. Explain the meaning of the terms : connection-oriented and connection-less modes, relating to a Data link layer protocol.

4. Explain the principle of operation of a CRC error detection method. Give an example

5. Define and explain virtual path and virtual circuit.

6. Explain the problems faced in window congestion control.

7. Explain the important features of TCP and UDP.

8. Describe statistical multiplexing of ATM.

9. Explain various components of e-mail system.

10. Explain the types of error correcting methods used by Bluetooth.

(10 × 4 = 40 marks)

Part B

Answer any one full question from each module.
Each full question carries 12 marks.

MODULE 1

11. With neat diagrams, explain the services, interfaces and protocols with respect to OSI-ISO model.

Or

12. Explain different kinds of satellites used in compute communication. Describe the features of LEO and MEO satellites.

Turn over

MODULE 2

13. (a) Discriminate between the send window and receive window for a link and how they are related for a Go Back N control scheme.

                                                                                                            (7 marks)

    (b) "In stop and wait protocols, frames and acknowledgements should be numbered". Justify.

                                                                                                            (5 marks)

Or

14. Explain in detail, with example, neat sketches and necessary derivations, the following :—

    (i) Framing-all types.

    (ii) Aloha and slotted Aloha.

MODULE 3

15. What are the three phases of congestion control algorithm ? Explain them.

Or

16. (a) Discuss the principle of distance vector routing with neat diagrams.   (6 marks)

    (b) Describe the dynamic alternate routing and separable routing for circuit switched networks.

                                                                                                            (6 marks)

MODULE 4

17. (a) Discuss cell formats in an ATM network.   (6 marks)

    (b) Explain the different service categories used in ATM networks.   (6 marks)

Or

18. (a) Explain the window adjustment process in TCP.   (6 marks)

    (b) Explain the concept of IP over ATM.   (6 marks)

MODULE 5

19. What are the different kinds of services rendered by DNS ? Explain each one clearly.

Or

20. Draw and explain the Bluetooth protocol architecture. Explain the functions of L2CAP and in it ?

                                                                                            [5 × 12 = 60 marks]

G 5071   (Pages : 2)   Reg. No..............................

Name..............................

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering/Information Technology

NETWORK COMPUTING (R, T)

(Improvement/Supplementary/Mercy Chance)

Time : Three Hours   Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 4 marks.

1. Give any tout common attributes of the <FRAMESET> tag and their purpose.

2. Explain the use of the CLASS attribute.

3. What do you mean by an ActiveX control ? Compare it with Java applets.

4. Explain how JavaScript can be used to dynamically update a web site.

5. Explain the purpose of the finalize ( ) method of Java.

6. What are static classes ? Explain their use.

7. Compare and contrast Applets and Application programs.

8. Explain the additional security features that Applets can have.

9. Explain the ways in, which a CGI program gets data from the client browser.

10. Differentiate between persistent and non-persistent HTTP.

(10 × 4 = 40 marks)

Part B

Answer any **one** *full questions*
Each full question carries 12 marks.

11. (a) Illustrate the use of external, embedded and inline CSSs with sample code for each.

(8 marks)

(b) Give the advantages and disadvantages of frames.   (4 marks)

Or

12. (a) Comment on the cascading effect of CSS.   (4 marks)

(b) Explain the usage of <SPAN> and <DIV> tags with sample code.   (8 marks)

Turn over

13. (a) Write a JavaScript program that reads five integers and displays the largest and the smallest among them.

                                                                        (6 marks)

    (b) Write a JavaScript program to sort an array of 10 integers.   (6 marks)

                                      Or

14. (a) Write a JavaScript program that calculates the product of the odd integers from 1 to 15 and then outputs HTML text that displays the result.

                                                                        (6 marks)

    (b) Explain the purpose of any *six* of the Java Script's global functions.   (6 marks)

15. (a) Explain Java's inter-thread communication mechanism with the help of a sample code.

                                                                        (8 marks)

    (b) Explain the use of any four major methods that the Thread class defines..   (4 marks)

                                      Or

16. (a) Explain and differentiate between method overloading and method overriding with the help of code.

                                                                        (8 marks)

    (b) Why are destructors as in C++ not there in Java ?   (4 marks)

17. Give and explain a simple TCP client program and a corresponding server program.

                                                                        (12 marks)

                                      Or

18. What is the URL Connection class of Java for? Give a sample code to illustrate the use of it.

                                                                        (12 marks)

19. Explain the working of SMTP and POP protocols.   (12 marks)

                                      Or

20. (a) Explain the working of a typical CGI supported web server.   (8 marks)

    (b) Differentiate between GET method and POST method of HTTP.   (4 marks)

                                                        [5 × 12 = 60 marks]

G 5081　　　　　　　　　(Pages : 2)　　　　Reg. No....................

　　　　　　　　　　　　　　　　　　　　　　Name.....................

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering

ALGORITHM ANALYSIS AND DESIGN (R)

(Improvement/Supplementary/Mercy Chance)

Time : Three Hours　　　　　　　　　　　　　　　　Maximum : 100 Marks

Answer **all** *questions.*

Part A

Each question carries 4 marks.

1. Define Big Oh notation of a function $f(n)$.

2. Differentiate between space and time complexity of algorithms.

3. Explain briefly the recursive algorithm for finding maximum and minimum.

4. Describe the general principle of Divide and conquer.

5. Briefly explain how Job sequencing with deadline is performed.

6. Write short note on Minimum cost spanning trees.

7. Briefly explain about State Space method.

8. What is a comparison tree ? Draw the comparison tree for sorting three elements.

9. What is the central principle of backtracking? Taking n-queens problem as an example /explain the solution process.

10. What is branch and bound ? How is it different from backtracking ?

　　　　　　　　　　　　　　　　　　　　　　　　　(10 × 4 = 40 marks)

Part B

Each full question carries 12 marks.

11. Write an algorithm to compute n! recursively. Set up a recurrence relation for the algorithm's basic operation count and solve it.

Or

12. Explain all asymptotic notations used in algorithmic analyses with examples.

Turn over

13. Explain Quicksort algorithm and its complexity.

Or

14. Explain about the divide and conquer approach to find the maximum and minimum in a set of 'n' elements. Also find the recurrence relation for the number of elements compared and solve the same.

15. Explain Prim's algorithm and it's complexity.

Or

16. Discuss about the Greedy algorithm for job sequencing with deadlines. Solve the following job sequencing problem using it :

$(p1, p2, ... p7) = (3, 5, 20, 18, 1, 6, 30)$ and $(d1 / d2, ... d7) = (1, 3, 4, 3, 2, 1, 2)$

17. Explain about forward and backward approach used in multistage graphs.

Or

18. Discuss how Comparison trees are used for searching and sorting.

19. Explain how backtracking is used for solving 4-queens problem. Show the state space tree.

Or

20. Discuss about the various Branch and Bound techniques.

$(5 \times 12 = 60 \text{ marks})$

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering/Information Technology

CS 010 601/IT 010 601—DESIGN AND ANALYSIS OF ALGORITHMS (CS, IT)

(New Scheme—Regular)

Time : Three Hours   Maximum : 100 Marks

*Answer **all** the questions.*

Part A

Each question carries 3 marks.

1. What is an algorithm ? Mention its properties.
2. Is there any advantage for Strassen's matrix multiplication over ordinary matrix multiplication. Justify your answer.
3. Explain the greedy strategy.
4. What do you mean by bounding function ?
5. Describe briefly planar graph colouring.

                                                    (5 × 3 = 15 marks)

Part B

Each question carries 5 marks.

6. What is an Asymptotic Notation ? Explain how complexity analysis is done with each of them.
7. Explain the binary search algorithm.
8. State and explain 0 –1 knapsack problem
9. Write notes on back tracking.
10. Explain complexity of Kth element selection.

                                                    (5 × 5 = 25 marks)

Part C

Each question carries 12 marks.

11. (a) Solve the following recurrences using Iteration method :

$$T(n) = 2T(\lfloor n \mid 3 \rfloor) + n.$$

(b) Solve $T(n) = 3T(n \mid 4) + n$ using recursion tree.

                                                  (6 + 6 = 12 marks)

Or

12. Explain Amortised analysis and analyse its complexity.   (12 marks)

13. Explain quick sort and analyse its complexity.   (12 marks)

Or

14. Explain strassen's matrix multiplication.   (12 marks)

15. Explain Prim's algorithm and analyse its complexity with an example.   (12 marks)

Or

16. What is dynamic programming ? Explain travelling sales man problem and analyse the complexity.

(12 marks)

17. Explain N Queens problem. Also describe how to solve it and analyse complexity.   (12 marks)

Or

18. Explain how sum subset problem is solved and analyse in complexity.   (12 marks)

19. What is string matching ? Explain Rabin-Karp algorithm for string matching. (12 marks)

Or

20. (a) Explain searching and sorting with the help of comparison trees.   (8 marks)

    (b) Explain randomised and Las vegas algorithm.   (4 marks)

[5 × 12 = 60 marks]

G 5401   (Pages : 2)   Reg. No.............................

                                                            Name............................

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering

CS 010 602—INTERNET COMPUTING (CS)

(New Scheme—Regular)

Time : Three Hours   Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 3 marks.

1. What are the data types used in Java ?
2. What is Inheritance ?
3. What are Applets ?
4. Explain Datagrams.
5. What is a Serulet ?

                                                            (5 × 3 = 15 marks)

Part B

Each question carries 5 marks.

6. Write a Java program that illustrates and selection process.
7. Explain packages in Java.
8. Compare Byte streams and character streams.
9. Explain Secure Server Sockets.
10. Write briefly on Image Processing in Java.

                                                            (5 × 5 = 25 marks)

Part C

Each question carries 12 marks.

11. Explain the object oriented programming features supported in Java.

                                    Or

12. Write a Java program that arranges a set of 20 integers in ascending order.

13. (a) Explain the concept of threads.

    (b) Write briefly on :

        (i) Multithreaded programs.

        (ii) Thread synchronization.

                                    Or

                                                            Turn over

14. Explain Exception Handling and the need for Exception Handling. How is Exception Handling done in Java.

15. (a) Explain Event Handling. List the different Event listeners in Java.

    (b) Explain Applet Architecture.

Or

16. (a) Explain the advantages of swings. Discuss about swing components and swing packages.

    (b) Explain the differences between swings and AWT components.

17. Write briefly on :

    (a) IP multicasting.

    (b) Remote Method Invocation.

Or

18. Explain socket programming in Java with a suitable example.

19. (a) Explain Java servlet life-cycle in detail.

    (b) Explain the different drivers in JDBC.

Or

20. (a) Explain Image Filter class.

    (b) Explain JSP.

    (c) Write briefly on Web Application Development using Java Technologies.

$(5 \times 12 = 60$ marks$)$

G 5410   (Pages : 2)   Reg. No.............................

Name.................................

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering

CS 010 603—SYSTEM SOFTWARE (CS)

(New Scheme—Regular)

Time : Three Hours   Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. What is system software ? Explain.

2. What is Macrocalls ? Explain.

3. Bring out the basic functions of Assembler.

4. What is user interface ?

5. What is the necessity of device driver ?

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. Explain the generation of unique labels.

7. Discuss the basic structure of microsoft OBJ file format.

8. What is a linkage editor ? Explain.

9. Explain debugging functions.

10. Explain device characteristics.

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each question carries 12 marks.

MODULE I

11. Discuss different types of Macros.

Or

12. Describe in detail the nested macro calls and recursive macro calls with examples.

Turn over

MODULE II

13. Explain two pass assembler and its algorithm.

Or

14. Explain the necessity of two passes and forward reference.

MODULE III

15. With diagram, explain dynamic linking.

Or

16. Explain different types of loaders.

MODULE IV

17. Explain different debugging methods in detail.

Or

18. Give the uses of user interface and with diagram explain the editor structure.

MODULE V

19. Describe in detail different types of device drivers.

Or

20. Explain block devices and block device drivers.

(5 × 12 = 60 marks)

G 5421 (Pages : 2) Reg. No...............................

Name.......................................

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering

CS 010 604—COMPUTER NETWORKS (CS)

(New Scheme—Regular)

Time : Three Hours   Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. What are High speed Networks ?

2. Explain the functions of Data link layer protocols.

3. Discuss the concept of Packet switching.

4. Explain the advantages of TCP.

5. What are Peer to Peer Networks.

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. Explain the significance of layered network architecture.

7. Discuss the physical properties of Ethernet.

8. Discuss the limitations of Bridges.

9. Explain RPC.

10. Explain www.

(5 × 5 = 25 marks)

Part C

Answer all questions.
Each question carries 12 marks.

11. (a) Explain the factors affecting the performance of a network.

    (b) Explain how performance can be improved in High speed networks.

Or

12. Explain the Internet architecture in detail.

Turn over

13. Explain in detail about :

    (a) Bluetooth.

    (b) Wi-max.

    (c) Wi Fi.

<div align="center">Or</div>

14. Explain the different Data link layer protocols in detail.

15. (a) Explain the significance of IP address.

    (b) Briefly discuss about :

        (i) Forwarding in IP.

        (ii) Address Translation.

<div align="center">Or</div>

16. (a) Explain spanning tree algorithm.

    (b) Compare Distance vector routing and Link state routing.

17. (a) Explain the issues of TCP.

    (b) Explain the frame format of TCP header.

<div align="center">Or</div>

18. Explain the different TCP congestion control mechanisms.

19. Explain the working of E-mail system and specify how Application layer protocol supports the reliable delivery of E-mail to the correct destination.

<div align="center">Or</div>

20. Explain :

    (a) FTP.

    (b) DNS.

    (c) Cryptography.

<div align="right">(5 × 12 = 60 marks)</div>

G 5433 (Pages : 2) Reg. No...............................

Name.................................

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering

CS 010 605–SOFTWARE ENGINEERING (CS)

(New Scheme—Regular)

Time : Three Hours
Maximum : 100 Marks

Part A

Answer all questions.
Each question carries 3 marks.

1. Define Embeded Software.

2. Describe Project planning.

3. Explain Inception.

4. What do you mean by Design ?

5. What are the advantages of Structured Programming ?

(5 × 3 = 15 marks)

Part B

Answer all questions.
Each question carries 5 marks.

6. Explain Legacy Software.

7. Draw a Gantt Chart and Explain.

8. Explain Negotiation and Specification.

9. Explain function Oriented Design.

10. Write a note on Implementation Techniques.

(5 × 5 = 25 marks)

Part C

Answer any **one** *question from each module.*
Each question carries 12 marks.

11. Explain the capability maturity Model Integration (CMMI).

Or

12. Write notes on (i) The Waterfall Model ; (ii) The Spiral Model.

Turn over

13. Write notes on : (i) COCOMO II ; (ii) configuration Management.

Or

14. Explain : (i) PERT charts ; (ii) cost Estimation.

15. Explain in detail The eliciting Requirements.

Or

16. Explain : (i) Analysis Pattern ; (ii) SRS Document.

17. Explain top-down and bottom-up design.

Or

18. Explain : (i) Object-oriented Design ; (ii) Design activity and its objectives.

19. Write notes on : (i) White-Box testing ; (ii) Control Structure Testing.

Or

20. Give a case study : Test case design and Testlog preparation.

(5 × 12 = 60 marks)

G 5042   (Pages : 2)   Reg. No.............................

Name.................................

B.TECH. DEGREE EXAMINATION, MAY 2013

Sixth Semester

Branch : Computer Science and Engineering/Information Technology

SOFTWARE ENGINEERING (R, T)

(Improvement/Supplementary/Mercy Chance)

Time : Three Hours   Maximum : 100 Marks

Part A

*Answer **all** questions.*

Each question carries 4 marks.

1. What are the limitations of the Waterfall model?

2. Briefly explain the Spiral Model.

3. Briefly explain the intermediate COCOMO model.

4. What is a Cost-Schedule Milestone graph? Explain its use.

5. Differentiate between functional abstraction and data abstraction used in software design.

6. What do you mean by Stability Metrics of a design?

7. What do you mean by Prologue of a code module? What are the desirable contents of a Prologue?

8. Explain the process of Code Reading.

9. Explain the terms : Error, Fault and Failure.

10. What do you mean by Boundary Value Test Case? Explain.

(10 × 4 = 40 marks)

Part B

*Answer **all** questions.*

Each question carries 12 marks.

11. (a) Explain the goals of Planning, Monitoring and Control, and Termination Analysis phases of project management.

Or

(b) What do you mean by software metrics? How are they generally measured? Explain the need for models.

(6 + 6 = 12 marks)

Turn over

12. (a) Explain the types of the most common errors that may occur in an SRS.

    (b) Explain the different Software Requirement Validation methods in detail.

(4 + 8 = 12 marks)

13. Explain any *four* methods for monitoring a project.

(12 marks)

Or

14. Explain the software inspection/review process in detail.

(12 marks)

15. (a) Explain in detail, the concepts of Coupling and Cohesion with respect to function-oriented design

    (b) What is the difference between a flow chart and a structure chart?

(8 + 4 = 12 marks)

Or

16. Briefly explain the steps of Structured Design Methodology.

(12 marks)

17. Explain in detail, the Symbolic Execution method for code verification.

(12 marks)

Or

18. (a) Explain the Static Analysis method for code verification.

    (b) What is a symbolic execution tree? Give its properties.

(8 + 4 = 12 marks)

19. Explain and differentiate between Control Flow Based and Data Flow Based structural testing.

(12 marks)

Or

20. Explain the Mutation Testing in detail.

(12 marks)

[5 × 12 = 60 marks]