

UG-734

BCA-13

**B.C.A. DEGREE EXAMINATION —
JUNE 2018.**

Third Year

TCP/IP PROGRAMMING

Time : 3 hours

Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Define DNS. Explain the characteristics of DNS.
2. What is IP routing? Explain how indirect routing is different from direct routing.
3. Explain congestion control and Quality of service in context of TCP.
4. State the characteristics and features of UDP.
5. Briefly explain the levels of TCP/IP stack.
6. State the differences between TCP and UDP.
7. Write notes on IP subnet addressing.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

8. Explain in detail about the TCP/IP layering reference model in detail.
9. (a) Differentiate between connection-oriented and connection less services.
(b) Explain the four classes of IP address and give one example address for each class.
10. (a) Explain the different types of subnet mask representation.
(b) Explain the UDP echo server.
11. What is DNS server? Differentiate between primary and secondary DNS servers.
12. Define TCP. Explain the components of TCP header field with a neat sketch.
13. Explain the structure of UDP header.
14. Write in detail about the client server model of Interaction Socket interface.

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BCA-14

**B.C.A. DEGREE EXAMINATION —
JUNE, 2018.**

Third Year

C++ AND OBJECT ORIENTED PROGRAMMING

Time : 3 hours

Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Write short notes on macros.
2. Briefly explain the bitwise logical operators with sample C++ code.
3. Write short notes on Bitfields.
4. What is constructor? Explain with example program.
5. List out the different types visibility labels of a member class in C++. Give the example program.

6. Distinguish the iterative procedure of while loop from do.. while loop through the C++ sample code.
7. Discuss on conditional expressions with example.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

8. Discuss in detail about I/O stream class hierarchy with neat pictorial representation and give the C++ code.
9. Explain the following with suitable examples :
 - (a) Bitwise logical operators
 - (b) Increment and decrement operator.
10. Explain in detail about single dimensional array and multi dimensional array with suitable C++ examples.
11. Describe in detail about the function definition and returning values with suitable examples.
12. Explain in elaborate about the overview of C++ and structure of C++ program with suitable C++ code.
13. Discuss in detail about Iteration statements with suitable examples.
14. Define polymorphism. Discuss in detail about function overloading and operator overloading.

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**B.C.A. DEGREE EXAMINATION —
JUNE 2018.**

Third Year

THEORY OF COMPUTER SCIENCE

Time : 3 hours

Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Define disjoint sets and mutually disjoint sets with examples.
2. Show that the formula $Q \vee (P \wedge \neg Q) \vee (\neg P \wedge \neg Q)$ is tautology using conjunctive normal form.
3. Form a tree for the following expression : $V_1 V_2 + (V_4 + (V_5 / V_6)) V_3$.
4. Construct a truth table of $(P \rightarrow Q) \rightarrow (P \wedge Q)$.
5. Explain the four classes of grammar.

6. Show that $(B \rightarrow C) \wedge C \wedge (A \rightarrow B)$ is a contradiction.
7. Check whether the function $f(x) = x^2 - 11$ from R to R is one to one? On to or both justify.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

8. If $f(x) = x^2 - 3x + 1$, $g(x) = 2x - 3$, find fog, gof, fof, gof.
9. Define function. Explain one-to-one and On to function with examples.
10. Design a finite state automata that accepts, precisely those strings over $\{a, b\}$ that contain an odd number of a's.
11. Prove that $(P \rightarrow Q) \wedge (Q \rightarrow R) \rightarrow (P \rightarrow R)$ is a tautology.
12. Explain the properties of set operations.
13. Show that r is a valid inference form premises $p \rightarrow q, q \rightarrow r$ and p .
14. Explain Turing machine techniques.

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BCA-16

**B.C.A. DEGREE EXAMINATION —
JUNE 2018.**

**INTRODUCTION TO INTERNET
PROGRAMMING**

Time : 3 hours

Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Briefly explain the concept typecasting in detail.
2. State the benefits of Object Oriented Programming.
3. Explain about the Wrapper classes in detail.
4. Write a java program for typecasting using try, catch and finally block.
5. Briefly discuss about the multithreading with suitable example.

6. Explain two types of errors and error handling tasks in detail.
7. Write a java program to print multiplication table using do-while loop.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

8. With suitable example, explain the entry controlled loop — FOR statement.
9. Explain about JVM with a block diagram.
10. Explain about JAVA classes, Objects and Methods.
11. What is meant by an applet ? Explain the architecture of an applet.
12. Explain about the control structures in JAVA.
13. Explain briefly about the two types of programs in JAVA with suitable example.
14. Briefly explain about interface with suitable example.

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**B.C.A. DEGREE EXAMINATION —
JUNE, 2018.**

Third Year

INTERNET ADMINISTRATION

Time : 3 hours

Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. Explain the components needed for intranet.
2. Differentiate between LAN and WAN.
3. Write notes on the graphical tools that are used for creating and animating fields.
4. With the help of a diagram, explain the proxy ARP.
5. Why does FTP uses two connections? Also, explain the working of FTP.
6. Write short notes on groupware software.
7. Differentiate between ODBC and JDBC.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

8. Explain in detail about the types of Intranet.
 9. Explain the security tools each with a real time application.
 10. Explain in detail about the Intranet management tools.
 11. Explain in detail about the web server specific protocols.
 12. Explain how SOCKS can be used to construct a firewall on a TCP/IP based server.
 13. Explain the following.
 - (a) POP
 - (b) HTTP.
 14. Write short notes on.
 - (a) CDMA
 - (b) WAP.
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**B.C.A. DEGREE EXAMINATION –
JUNE, 2018.**

Third Year

MANAGEMENT PRINCIPLES AND TECHNIQUE

Time : 3 hours

Maximum marks : 75

PART A — (5 × 5 = 25 marks)

Answer any FIVE questions.

1. What is planning? What are its premises?
2. Why symbolic models are mostly preferred in OR?
3. Solve the following Assignment Problem.

| | | | | |
|----|----|----|----|----|
| 11 | 1 | 8 | 16 | 20 |
| 9 | 7 | 12 | 6 | 15 |
| 13 | 16 | 15 | 12 | 16 |
| 21 | 24 | 17 | 28 | 26 |
| 14 | 10 | 12 | 11 | 15 |

4. What is replacement theory? Name the types of failures that are considered in this theory.
5. Name the different floats and how is it useful to a project manager.

6. Find an initial solution using penalty method.

| From/To | D1 | D2 | D3 | Supply |
|---------|-----|-----|-----|--------|
| S1 | 6 | 12 | 3 | 150 |
| S2 | 5 | 13 | 2 | 250 |
| S3 | 5 | 10 | 3 | 200 |
| Demand | 300 | 200 | 100 | |

7. List down the characteristics of an effective leader.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

8. Write a note on Control in detail.
9. Write a note on Dual simplex of LP Problems in detail.
10. Solve the following transportation problem.

| | | | | To | | Capacity |
|------|--------|----|----|-----|-----|----------|
| | | K | L | M | N | |
| | A | 42 | 48 | 38 | 37 | 160 |
| From | B | 40 | 49 | 52 | 51 | 150 |
| | C | 39 | 38 | 40 | 43 | 190 |
| | Demand | 80 | 90 | 110 | 160 | 440/500 |

11. Explain in detail on :
- (a) PERT
- (b) CPM.
12. Draw the network for the project with the following characteristic. Find the critical path. If activity F takes an additional day to get completed, what are the changes in your calculations?

| Activity | A | B | C | D | E | F | G | H |
|-----------------|---|---|---|---|---|----|---|---------|
| Pre-activity | – | A | A | B | B | DE | D | C, F, G |
| Duration (days) | 2 | 4 | 8 | 3 | 2 | 3 | 4 | 8 |

13. Solve the following LPP using a well-known iterative procedure.

$$\text{Max } Z = 5x + 3y$$

Subjected to :

$$3x + 5y \leq 15$$

$$5x + 2y \leq 10$$

where x and $y \geq 0$.

14. What is decision making? Explain various types of decision making in detail.
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