U.G. DEGREE EXAMINATION — JULY, 2022.

Computer Applications

(From CY – 2020 onwards)

Third Year

TCP/IP PROGRAMMING

Time : 3 hours   Maximum marks : 70

PART A — (3 × 3 = 9 marks)

Answer any THREE questions out of Five questions in 100 words.

All questions carry equal marks.

1. Define Protocol. List any three protocols used in networking.

2. What is IP subnet?

3. What are the six TCP flags in a TCP header?

4. Why do we require UDP protocol?

5. Give examples for official and unofficial internet domain names.

PART B — (3 × 7 = 21 marks)

Answer any THREE questions out of Five questions in 200 words.

All questions carry equal marks

6. What is connection oriented and connection less services?

7. Give the structure of an IP address.

8. Explain the four way handshake in TCP.

9. What are the four fields of UDP header? Explain.

10. List the limitations of UDP protocol

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. Explain client server model in detail.

12. Explain routing with IP addresses.

13. With a neat diagram explain the header format and structure of TCP

14. Discuss TCP/IP over ATM network.

15. Explain the concept of queuing in UDP protocol.

16. Define DNS. Explain mapping domain names to Addresses.

17. What is TCP/IP? Explain TCP/IP model.

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U.G. DEGREE EXAMINATION —
JULY, 2022.

Computer Application

(From CY – 2020 onwards)

Third Year

C++ AND OBJECT ORIENTED PROGRAMMING

Time : 3 hours   Maximum marks : 70

PART A — (3 × 3 = 9 marks)

Answer any THREE questions out of Five questions in 100 words.

All questions carry equal marks.

1. Define identifier. Give example.

2. Give the syntax for conditional operator. Give example.

3. Define array. List the operations on array.

4. What is polymorphism?

5. Define inline function. How is it useful?

PART B — (3 × 7 = 21 marks)

Answer any THREE questions out of Five questions in 200 words.

All questions carry equal marks

6.   Brief on Type casting in C++.

7.   Distinguish between Break and Continue statement.

8.   How to create list using pointers in C++?

9.   Define Recursion. Write a program to find the factorial of a number using Recursion.

10. What are exceptions? Distinguish between try and catch.

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions out of Seven questions in 500 words.

All questions carry equal marks.

11. With a neat sketch, explain the structure of C++ program.

12. Explain the constructs of looping statements.

13. What is a multi dimensional array? Write a program to find the transpose of a matrix.

14. Define inheritance. Explain the type of inheritance with examples.

15. Discuss the file operations used on text file.

16. Design a calculator using switch case statement.

17. Explain with a simple program, how to create and use I/O manipulators.

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Computer Applications

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Third Year

THEORY OF COMPUTER SCIENCE

Time : 3 hours   Maximum marks : 70

PART A — (3 × 3 = 9 marks)

Answer any THREE questions out of Five questions in 100 words.

All questions carry equal marks.

1. Define set. List the notation of set.

2. What do you mean by a proposition?

3. Define grammar. Give a example.

4. Define a Complete Graph and give an example.

5. Give an example of a relation which is reflexive and transitive but not symmetric.

PART B — (3 × 7 = 21 marks)

Answer any THREE questions out of Five questions in
200 words.

All questions carry equal marks

6. Define power set of a set and Cartesian product
with suitable example. Also find P(A), P(B), A × B
and B × A if A if A = {1,2,3}. B = {4,5,6,7}.

7. Write the conjunctive normal form of
$(q \vee (p \wedge r)) \wedge \sim ((p \vee r) \wedge q)$.

8. What are the properties of regular language?

9. Prove that every connected graph contains a
spanning tree.

10. (a) Draw a directed graph and mark a directed
path in it.

    (b) Define Euler diagraph and give an example.

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions out of Seven questions in
500 words.

All questions carry equal marks.

11. Explain set operations with Venn diagrams.

12. Define function. Discuss the various types of
function with an example.

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13. Write the steps to convert context free grammar into regular expression by taking suitable example.

14. Define Tree. Explain the various tree traversal techniques.

15. (a) Check whether $\left(\left(p \to q\right) \to r\right) \vee \neg p$ is a tautology.

    (b) Write short notes on theory of Inference.

16. (a) Show that $\left(\sim \left(p \vee q\right)\right) \vee \left(\sim p \wedge q\right) = \sim p$.

    (b) Let S = {1,2,3} Define relation R = {(1,1), (1,2), (2,3), (3,3)}. It is an equivalence relation?

17. What are Turing machine? Explain different ways by which we can represent the Turing machine.

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U.G. DEGREE EXAMINATION — JULY, 2022.

Computer Application

(From CY – 2020 onwards)

Third Year

INTRODUCTION TO INTERNET PROGRAMMING

Time : 3 hours   Maximum marks : 70

PART A — (3 × 3 = 9 marks)

Answer any THREE questions each in 100 words.

1. What is a variable? How to declare variable in Java?

2. Define Array. How to declare an array?

3. What is abstract class? Give an example.

4. List out the advantages of multithreading.

5. Write a note on this and super keyword.

PART B — (3 × 7 = 21 marks)

Answer any THREE questions each in 200 words.

6. Explain about various operators in Java.

7. Write a Java program to find the sum and average of in given numbers.

8.   What is an inner class? Explain with an example.

9.   Explain the basics of an exception handing.

10.   How do define and implement an interface in Java? Explain.

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions each in 500 words.

11.   Explain about various data types in Java with suitable examples.

12.   Explain the loop structures in Java with example.

13.   Describe the implementation of method overloading with an example.

14.   Explain about creating packages and accessing a package with examples.

15.   How do you overload constructors? Explain it with example.

16.   Discuss the access control specifiers with example.

17.   Discuss the features of Java.

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Computer Application

(From CY 2020 onwards)

Third Year

INTRANET ADMINISTRATION

Time : 3 hours   Maximum marks : 70

PART A — (3 × 3 = 9 marks)

Answer any THREE questions each in 100 words.

1.   What are the advantages of intranet?
2.   What is Firewall?
3.   What is Web graphics?
4.   What is NSAPI?
5.   What is JDBC?

PART B — (3 × 7 = 21 marks)

Answer any THREE questions out of Five questions in 200 words.

6.   What are Types of Intranet? Explain any one in detail
7.   Explain the LAN topology.

8. Write notes on authoring tools with examples.

9. Brief note on E-Commerce Protocols.

10. Write short notes on permissions and restrictions of intranet.

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions out of Seven questions in 500 words.

11. Explain the Security features in Intranet.

12. Discuss in details about various Web based Tools.

13. Explain in detail about Intranet Managing tools.

14. List and explain any two service protocols.

15. Write a note on web browser and web server software.

16. Give the over view of CDMA and WAP protocols briefly.

17. List out e-mail protocols and explain any two of them.

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Computer Applications

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Third Year

MANAGEMENT PRINCIPLES AND TECHNIQUE

Time : 3 hours   Maximum marks : 70

PART A — (3 × 3 = 9 marks)

Answer any THREE questions each in 100 words..

1. List the application on operations research in functional areas of management.

2. What is linear programming?

3. What is meant by critical path?

4. What is replacement theory?

5. List the methods used to arrive at an initial basic feasible solution in a transportation model.

PART B — (3 × 7 = 21 marks)

Answer any THREE questions.

6. What are the functions of management? Explain.

7. Solve the following transportation problem.

	D₁	D₂	D₃	Supply
S₁	8	5	6	120
S₂	15	10	12	80
S₃	3	9	10	80
Demand	150	80	50	280

Does it a unique solution? If not, what are the other alternatives?

8. What are the advantages and disadvantages of PERT/CPM?

9. A milk plant is offered an equipment A which is priced at Rs. 60,000 and the costs of operation and maintenance are estimated to be Rs. 10,000 for each of the first 5 year, increasing every year by Rs. 3,000 per ear in the sixth and subsequent years. If money carries the rate of interest 10% per annum what would the optimal. Replacement period?

10. The cost of the machine is Rs. 6,100/- and its scrap value is Rs. 100 at the end of every year. The maintenance cost (MC) found from experience are as follows :

Year	1	2	3	4	5	6	7	8
M.C.	100	250	400	600	900	1200	1600	200

When should the machine be replaced?

PART C — (4 × 10 = 40 marks)

Answer any FOUR questions.

11. What is planning? Explain the steps involved in planning.

12. Using graphical method, Solve the following L.P.P.

Maximize $Z = 5x_1 + 8x_2$

Subject to

$$15x_1 + 10x_2 \leq 180$$
$$10x_1 + 20x_2 \leq 200$$
$$15x_1 + 20x_2 \leq 210 \text{ and } x_1, x_2 \geq 0.$$

13. A automatic safety electric switches attached to a press has the following probability.

No. of year	1	2	3	4	5	6	7
Probability of failure	0.05	0.1	0.15	0.2	0.35	0.1	0.05

If the average cost to replace the single switch is Rs. 15/- but, this comes down to Rs. 3/- when the replacement is carried out on the group basis. Find the optimum replacement.

14. Solve the LPP

Minimize $Z = 4x_1 + x_2$

Subject to

$$3x_1 + x_2 = 3$$
$$4x_1 + 3x_2 \geq 6$$
$$x_1 + 2x_2 \leq 4$$
$$x_1, x_2 \geq 0.$$

15. A project has the following times schedule.

Activity	Times in weeks	Activity	Times in weeks
$(1-2)$	4	$(5-7)$	8
$(1-3)$	1	$(6-8)$	1
$(2-4)$	1	$(7-8)$	2
$(3-4)$	1	$(8-9)$	1
$(3-5)$	6	$(8-10)$	8
$(4-9)$	5	$(9-10)$	7
$(5-6)$	4		

Construct the network and compute

(a)   TE and TL for each event

(b)   Float for each activity

(c)   Critical path an its duration.

16.   Following table gives the running costs per year
      and resale price of a certain equipment whose
      purchase price Rs. 5,000.

Year	1	2	3	4
Running cost (Rs.)	1500	1600	1800	2100
Resale value (Rs.)	3500	2500	1700	1200

Year	5	6	7	8
Running cost (Rs.)	2500	2900	3400	4000
Resale value (Rs.)	800	500	500	500

At what year is the replacement due?

17.   Causally medical officer in a hospital has received
      four requests for ambulance van facility.
      Currently, six vans are available for assignment
      and the estimated response time in minutes are
      shown in the table below. Determine which van
      should respond and what will be the average and
      total elapsed time?

	1	2	3	4	5	6
I	6	15	13	14	15	18
II	18	16	12	13	17	16
III	14	14	17	16	15	15
IV	13	17	19	18	14	17

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