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BCA SEM IV

Question Papers

Roll No:

Total No of questions: 05

Total No: of pages: 02

BCA Semester End Examination

Technical Writing Skills [BCA407]

Semester: IV

Duration: 02 Hrs. **Maximum Marks: 50**

Instructions as per subject:

1) *Figures to the right indicate maximum marks allotted*
2) *Provide sufficient margin space in the answer-book for recording marks.*
3) *Enter the appropriate main & sub-question numbers in the answer-book*

Q1. Answer any two of the following questions **(5x2=10Marks)**

A. What is 'Commercial English?'

B. What is 'Commercial Jargon?'

C. What are the different ways to collect data for a report?

Q2. Answer <u>any two</u> of the following. **(5x2=10 Marks)**

A. Assume you are the proprietor of a small business. Draft a testimonial for an employee who had worked for you as an accountant.

B. Assume you are the General Manager of a Call Center. An employee has been frequently reporting late to work. Draft a suitable memo reprimanding him for this behaviour.

C. Assume Mr. Pulkit Sharma has applied for the position of an Assistant Manager in your establishment. Write a letter to Mr. Sharma's previous employer requesting an honest opinion on Mr. Sharma's work.

Q3. Answer <u>any one</u> of the following. **(10 Marks)**

A. Assume you are a software developer. You want to leave your current job because you are dissatisfied with the lack of career growth and low salary. Draft a suitable resignation letter.

B. Assume you work in the HR department of an IT firm that creates animation and graphics for international clients. Draft an appointment letter for an employee who has been selected to join your organization as an animator.

Q4. Answer <u>any one</u> of the following **(10 Marks)**

A. Assume you work for a company that specializes in exporting its products overseas. You have been asked to head a committee that has been appointed to investigate the possibilities of expanding this export business. Draft the committee report.

B. Write a detailed note on the 'individual report.'

Q5. Answer <u>any one</u> of the following. **(10 Marks)**

A. Write a newspaper article, in about 400 words, on 'How Internet Has Impacted Our Lives'

B. Create a display advertisement for a new brand of sunglasses being launched this summer.

SSPES'S GOA MULTI-FACULTY COLLEGE

DHARBANDORA- GOA

Roll No:

Total No: of Questions: 05

Total No: of pages: 01

BCA Semester End Examination

Management Functions- (BCA-403)

Semester: IV

Duration: 2 Hrs. **Maximum Marks: 50 marks**

Instructions: 1) All questions are compulsory
2) Figures to the right indicate maximum marks allotted
3) Q.No.1 answer a & b **OR** x & y
4) From Q.No.2 to Q.No.5 answer A or X question
5) Provide sufficient margin space in the answer book to record marks
6) Enter the appropriate main & sub question number

Q.1. .a) What can be the blocks to effective delegation? **(5 marks)**

b) How did McClelland explain his need theory? **(5 marks)**

OR

Q.1. x) Explain the process of Controlling. **(5 marks)**

y) What are the sources (bases) of Power? **(5 marks)**

Q.2.A) What is Planning? And what can be the types of Planning? **(10 marks)**

OR

Q.2.X) Explain the Leadership Theories in detail **(10 marks)**

Q.3. A) Write a detailed note on Maslow's Need Hierarchy Theory. **(10 marks)**

OR

Q.3.X) What can be the various barriers to communication? **(10 marks)**

Q.4. A) What factors can affect the organization structure? **(10 marks)**

OR

Q.4.X) What is Leadership Development? What are the ingredients to it? **(10 marks)**

Q.5.A. a) Write a note on Centralization & Decentralization. **(5 marks)**

b) What is Motivation? How it is necessary to improve employees performance? **(5 marks)**

OR

Q.5.X) Write a detailed note on MBO. **(10 marks)**

Roll No:

Total No. of Questions: 05 **Total number of pages: 02**

B.C.A Semester End Examination

Management Functions BCA403

Semester IV

Duration: 2 Hrs. **Maximum Marks: 50**

Instructions *1) All questions are compulsory*

2) Figures to the right indicate maximum marks allotted.

3) Provide sufficient margin space in the answer-book for recording marks.

4) Enter the appropriate main & sub-question numbers in the answer-book.

5) Show important working notes as fair work.

6) From Q.No.2 to Q.No5 answer A or X questions.

Q.1.A)**Answer the following.** **(5*1=5)**

i)Planning for the company as a whole is known as _____.

ii)In the process of delegation, some part of the authority is allotted to_____.

iii) _____ power is derived from a person's ability to influence others via threats, punishments or sanctions.

iv) The process of monitoring, comparing & correcting is called _____.

v) Manager has subordinates, Leaders have _____.

Q.1.B) **Answer the following in one sentence each.** **(5*1=5)**

i) What do you mean by Delegation of Authority.

ii) Enlist the characteristics of the McGregon's theory Y category of employees.

iii) What are departmental Plans.

iv) Explain the concept of responsibility.

v) Explain situational leadership.

Q.2.A Explain the concept of Authority and elaborate the various sources of power.(10 marks)

OR

Q.2.X. Enumerate the shortcoming of Management by Objectives (MBO). (5 Marks)

Q.2.Y. Evaluate the concept of centralization and Decentralization. (5 Marks)

Q.3.A. Consider yourself as a manager of Human Resource Department of a giant IT firm, prepare a Leadership Development programme for the annual training of your employees.(10 marks)

OR

Q.3.X. Explain in detail the merits of Planning. (5 Marks)

Q.3.Y. Which leadership style according to you suits best in Indian organisations.(5 Marks)

Q.4.A.Make a comparative anaylysisMcClleland and Herzberg's Motivation – hygiene Theory.. (10 marks)

OR

Q.4.X. Explain the impact of motivation on employee behavior and performance.(10 marks)

Q.5.A. Elaborate the barriers of effective communication and suggest the remedial measures (10 marks)

OR

Q.5.X .Write a note on steps in decision making process. (5 Marks)

Q.5.Y State the process of communication along with diagram. (5 Marks)

Roll No:

Total No of questions: 5

Total No of pages: 3

BCA Semester End Examination

BCA 404 Data Analysis and Statistical Techniques

Semester IV

Duration: 2Hrs. **Maximum Marks: 50**

Instructions:

1. All questions are compulsory. However internal choice has been provided for Q.2 - Q.5
2. Figures to right indicate full marks.
3. Use of non-programmable calculators are allowed.
4. Graph paper will be provided on request.

Q 1) A) Answer the following. **(5×1=5)**

a) The empirical formula linking mean, median and mode is _____.
b) Formula for coefficient of correlation for non-repeated rank is _____.
c) The mean of poisson distribution is given by _____.
d) The coefficient of correlation 'r' indicates a positive correlation between x and y if r ≈ ___.
e) If two events A and B are such that P(A∩B) =0 then A and B are _____.

B) Answer the following. **(5×1=5)**

a) Define the term correlation.
b) State the formula for quartile deviation.
c) What is range?
d) Define data mining.
e) State the conditional probability for A given B.

Q 2) Answer the following. **(5×2=10)**

a) Calculate the standard deviation for the following.

Class Interval	0-2	2-4	4-6	6-8	8-10
Frequency	10	20	30	10	10

b) Draw the histogram for the following data.

Marks	0-10	10-20	20-30	30-40	40-50
No. of refrigerators	6	11	15	8	3

OR

c) Draw a less than ogive for the data given below:

Class interval	0-10	10-20	20-30	30-40	40-50
Frequency	4	6	10	8	12

d) Calculate mode and mean for the following data.

Time(min)	10-15	15-20	20-25	25-30	30-35	35-40	40-45
No. of workers	8	14	18	25	15	14	6

Q 3) Answer the following.

a) In how many different ways one can arrange 7 students on 3 chairs? **(2)**

b) Write properties of poisson distribution. **(3)**

c) A sample of 400 managers is found to have mean height of 171.38cms. Can it be reasonably regarded as a sample from a large population of mean height 171.17cms and sample having standard deviation 3.30cms. **(5)**

OR

d) From a group of 15 boys and 10 girls a committee of 4 boys and 3 girls are to be formed. Find the total number of ways committee can be formed. **(2)**

e) Give applications of normal distribution. **(3)**

f) What are the advantages & limitations of random sampling method? **(3)**

Q 4) Answer the following. **(5×2=10)**

a) Explain in brief simple random sampling.

b) For the data given below find the equations of both the lines of regression.

X	1	2	3	4	5
Y	2	5	3	8	7

OR

c) Write a short note on population distribution and sample distribution.

d) What is a scatter diagram? Draw the scatter diagrams for strong positive and strong negative correlations between two variables.

Q 5) Answer the following questions. (5×2=10)

a) Calculate D_6 and Q_3 from the following data.

Daily wages	30-32	32-34	34-36	36-38	38-40	40-42	42-44	44-46	46-48	48-50
workers	2	9	25	30	49	62	39	20	11	3

b) Write a short note on Apriori algorithm with an example

OR

c) Calculate P_{15} and P_{55} from the following data.

Overtime (hrs)	10-15	15-20	20-25	25-30	30-35	35-40
frequency	11	20	35	20	8	6

d) What are the uses of data mining?

XXXXXXXXXXXXXXXX

Roll No:

Total No: of pages: 02

S.Y.B.C.A Semester End Examination

Title of the Paper with Paper No: COMPUTER NETWORKS (BCA 402)

Semester: IV

Duration: 2Hours. **Maximum Marks: 50**

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1)All questions are compulsory
2)Figures to the right indicate maximum marks allotted
3)Start each new question on a fresh page
4)Enter the appropriate main and sub-question numbers in the answer book

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Q1.A) Complete the statement by using appropriate word(s): [5*1]Marks

i. A _____ is a computer network that covers a large geographic area such as a city, country, or spans even intercontinental distances.

ii. The _____ framing method uses a field in the header to specify the number of characters in the frame.

iii. _____is a computer networking device that creates a single aggregate network from multiple communication networks or network segments acting in data link layer.

iv. 152.124.167.122 belongs to _____ class in classful addressing.

v. _____ protocol is the stream-oriented protocol functioning in transport layer.

Q1.B)Answer The Following Questions Briefly. [5*1]Marks

i. Mention **ANY TWO** different IEEE standards for computer networking.

ii. State the purpose of repeater in physical layer.

iii. How many bits are assigned for network and host address in class C.

iv. List any two wireless media acting in physical layer.

v. Define port number with an example.

P.T.O.

Q2)Answer The Following Questions [10 Marks]

i. Describe OSI model 5Marks

ii. Outline the difference between TCP and UDP.(3 points) 3Marks

iii. Draw and Explain the frame format for IPV4 address. 5Marks

Q3).Answer The Following Questions [10Marks]

i. Differentiate between half- duplex and full- duplex communications. 2Marks

ii. Explain the differential Manchester data encoding technique with an example 3Marks

iii. Indicate the purpose of the Hamming distance and provide an example on how it is used. 5Marks

Q4)Answer The Following Questions [10Marks]

i. Write a short note on FTP protocol. 2Marks

ii. Explain the purpose of the 3-way handshake in TCP/IP connections and briefly describe the steps involved in it. 3Marks

iii. Define Cryptography. List and explain the Principles of Cryptography. 5Marks

Q5)Answer The Following Questions [10Marks]

i. List down **ANY TWO** Advantages of Fiber Optic. 2Marks

ii. Briefly explain the steps of Link State Routing Protocol. 3Marks

iii. Explain the working of Selective Repeat Protocol with suitable diagrams. 5Marks

******END******

Roll No:

Total No. of Questions: 05 **Total number of pages: 02**

B.C.A Semester End Examination

Management Functions BCA403

Semester IV

Duration: 2 Hrs. **Maximum Marks: 50**

Instructions *1) All questions are compulsory*
2) Figures to the right indicate maximum marks allotted.
3) Provide sufficient margin space in the answer-book for recording marks.
4) Enter the appropriate main & sub-question numbers in the answer-book.
5) Show important working notes as fair work.
6) From Q.No.2 to Q.No5 answer A or X&Y questions.

Q.1.A) Answer the following. **(5*1=5)**

i) Planning for the company as a whole is known as _____.

ii) In the process of delegation, some part of the authority is allotted to_____.

iii) _____ power is derived from a person's ability to influence others via threats, punishments or sanctions.

iv) The process of monitoring, comparing & correcting is called _____.

v) Manager has subordinates, Leaders have _____.

Q.1.B) Answer the following in one sentence each. **(5*1=5)**

i) What do you mean by Delegation of Authority.

ii) Enlist the characteristics of the McGregon's theory Y category of employees.

iii) What are departmental Plans.

iv) Explain the concept of controlling.

v) Explain situational leadership.

Q.2.A Explain the concept of Authority and elaborate the various sources of authority.

(10 marks)

OR

Q.2.X. Enumerate the shortcoming of Management by Objectives (MBO). **(5 Marks)**

Q.2.Y. Evaluate the concept of centralization and Decentralization. **(5 Marks)**

Q.3.A. Consider yourself as a manager of Human Resource Department of a giant IT firm, prepare a Leadership Development programme for the annual training of your employees.

(10 marks)

OR

Q.3.X. Explain in detail the merits of Planning. **(5 Marks)**

Q.3.Y. Which leadership style according to you suits best in Indian organisations. **(5 Marks)**

Q.4.A. Make a comparative anaylysis Mc Clleland and Herzberg's Motivation – hygiene Theory. **(10 marks)**

OR

Q.4.X. Explain the impact of motivation on employee behavior and performance. **(10 marks)**

Q.5.A. elaborate the barriers of effective communication and suggest the remedial measures

(10 marks)

OR

Q.5.X .Write a note on steps in decision-making process. **(5 Marks)**

Q.5.Y State the process of communication along with diagram. **(5 Marks)**

******************ALL THE BEST**************

Roll No:

Total No. of Questions: 05 **Total number of pages: 02**

B.C.A Semester End Examination
Management Functions BCA403
Semester IV

Duration: 2 Hrs. **Maximum Marks: 50**

Instructions *1) All questions are compulsory*
2) Figures to the right indicate maximum marks allotted.
3) Provide sufficient margin space in the answer-book for recording marks.
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iii) _____ power is derived from a person's ability to influence others via threats, punishments or sanctions.

iv) The process of monitoring, comparing & correcting is called _____.

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i) What do you mean by Delegation of Authority.

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Q.2.A Explain the concept of Authority and elaborate the various sources of authority.

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OR

Q.2.X. Enumerate the shortcoming of Management by Objectives (MBO). (5 Marks)

Q.2.Y. Evaluate the concept of centralization and Decentralization. (5 Marks)

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(10 marks)

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Q.5.Y State the process of communication along with diagram. (5 Marks)

**********ALL THE BEST**********

Roll No: _____

Total No. of Questions: 05

Total No. of pages: 02

BCA Semester End Examination

Technical Writing Skills (BCA 407)

Semester No: IV

Duration: 02 Hrs.

Maximum Marks: 50

Instructions: 1. Figures to the right indicate maximum marks.
2. Provide sufficient margin space in the answer-book for recording marks.
3. Enter the appropriate main & sub-question numbers in the answer-book

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Q.1) Answer the following questions. (5*2=10)

A) An employee in your office is careless in his work and behaves discourteously with other employees. Draft a memo to be given to him.

B) You are Naresh/Neena Kumar, the director of an electronics company, in Panaji requiring a driver cum office boy. Draft a suitable advertisement for the classified columns of a local daily.

Q.2 A) As the Librarian of the college, you have been asked by the Principal to suggest reorganization of the college library so as to make the maximum use of space and facilities available. Prepare the special report, recommending computerization of the library's catalogue and lending system. (10*1=10)

OR

Q. 2 B) Three management trainees have been appointed to a committee to look into the problem of theft and pilferage from the factory premises. Write the special report of the committee. (10*1=10)

Q.3 A) The result of SYBCA class has declined drastically since the last three years. Being the Head of Department you are asked to look into the matter and make recommendatory report. Draft a routine report. (10*1=10)

OR

Q.3 B) You have attended a workshop on "Creative Writing". Draft a report focusing on different activities held during the workshop and importance of thinking creatively. (10*1=10)

Q.4 A) You intends to apply for the post of a Manager in Grand Hyatt Bambolim Goa. Write an application letter along with bio-data. (10*1=10)

OR

Q.4 B) The Times of India has recently reported a number of deaths due to Malaria which is rampant in the state of Goa. Write a letter to the Editor of local daily giving suggestions to eradicate Malaria. You are Priyanka/Pranay Naik. Your address is Green Valley View, Colva Margao, Goa. (10*1=10)

Q.5 Answer **any two** of the following questions (5*2=10)

A) You are Renuka/ Rajendra Kharade, working as a special reporter for a local newspaper. Recently an exhibition of Arts, Crafts and Painting was held in the Town hall. Write a report of the exhibition for publication in the newspaper.

B) You placed an urgent order of office stationery and the supplier promised to deliver the goods in 24 hours. They have not been delivered even after two days. Draft a letter of complaint.

C) One of the employees in your firm has met with an accident. Write a letter to be sent to him.

D) One of your customers has been elected as the President of his professional association. Write a letter of congratulation.

Roll No:

Total No: of Questions: 5 **Total No: of pages: 4**

BCA Semester End Examination

Data Analysis and Statistical Technique

Semester No: IV

Duration: 2 Hrs. Maximum Marks: 50

Instructions: 1) All Questions are Compulsory.

2) Figures to right indicate marks.

3) Start each new question on a fresh page.

4) On request graph will be provided.

5) Non programmable calculators are allowed.

Q.1 A) Answer the following: **(5x1=5)**

i. $\bar{y}$ = _____

ii. Define probability distribution.

iii. Mean E(X) = _____

iv. Second quartile is given by Q_2 = _____

v. Binomial distribution is given by P(x) = _____

B) Answer the following: **(5x1=5)**

i. Define probability.

ii. For 2, 2, 3, 4, 4, 5, 5, 7, 9 the median is _____

iii. Coefficient of quartile deviation = _____

iv. Standard deviation (σ_x)= _____

v. Spearman's coefficient of correlation for repeated rank is given by R = _____

Q.2. Answer the following: **(10)**

A) i. Find the following bivariate data find,

a) coefficient of regression

b) coefficient of correlation.

x	2	1	3
y	5	7	3

ii. A perfect cubic die is thrown. Find the probability that :

a) an even number comes up.

b) a perfect square comes up.

c) an cube comes up.

d) an odd number comes up.

OR

B) i. Find the spearman's coefficient of correlation for the following **(10)**

R_1	2	1	4	3	4	6
R_2	6	3	2	1	5	3

ii. A ticket is drawn from 15 tickets numbered from 1 to 15. What is the probability that the number on the ticket drawn is

a) even **b)** odd

c) a multiple of 3 **d)** divisible by 4

Q.3. Answer the following: **(10)**

A) i. Out of 36 students appearing for S.S.C. examination, from a school, only 19 passed. Does this mean that the passing percentage from this school, in general is 60% at 1% level of significance?

ii. Calculate the mean deviation of the following data which represent the heights of 7 soldiers : 168, 164, 172, 169, 178, 173, 173.

OR

B) i. Draw the histogram for the following data and hence find the mode graphically.

Monthly Income	500-1000	1000-1500	1500-2000	2000-2500	2500-3000
No. of persons	30	50	100	40	30

ii. For a Poisson distribution with $\lambda = 3$, find P(2), $P(x \leq 3)$, given $e^{-3} = 0.05$.

Q.4. Answer the following: **(10)**

A) i. A box contains 5 black balls and 3 red balls. 2 balls are drawn at random. Find the probability distribution of red balls drawn.

ii. Calculate variance and standard deviation for the following

x	0	2	4	6	8
f	2	3	5	6	4

OR

B) i. Find n and p for a Binomial distribution If **(10)**

a) Mean = 12, variance = 10.2

b) Mean = 6, s.d. = 2

ii. A random sample of size 400 has sample proportion 0.75. Can we say that, it is drawn from a population with proportion P = 0.8 at 5% level of significance?

Q.5. Answer the following: (10)

A) i. The probability density mass function of a random variable 'X' is given below

$P(x) = 1/6$ when $x = 0, 1$

$= 1/8$ when $x = 2$

$= 1/4$ when $x = 3$

Find : **a)** $E(X)$ **b)** $V(X)$

c) $P(X < 3)$

ii. Find coefficient of correlation for the following

x	3	2	3	4	1	2
y	4	4	5	3	8	6

OR

B) i. For a binomial distribution find mean and variance if

a) $n = 10$, $p = 2/5$

b) $n = 12$, $p = 1/3$

ii. Draw a histogram and frequency polygon from the following data

Marks	0-10	10-20	20-30	30-40	40-50	50-60
No. of students	3	8	12	29	10	2

Roll No:

Total No: of Questions: 05

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BCA Semester End Examination

Management Function

Semester IV

Duration: 02 Hrs.

Maximum Marks: 50 Marks

Instructions: *1) Question No. 1 and No. 2 answer any four Question.*
2) Answer any one Questions from Q.No.3 to Q.No.6.
3) Figures to the right indicate maximum marks allotted.
4) Provide sufficient margin space in the answer-book for recording marks.
5) Enter the appropriate main & sub-question numbers in the answer-book.

Q1A) Answer the following questions in brief. **(5 *2=10 marks)**

1. Limitation of Trait leadership theory.
2. Long term and short term planning.

OR

Q1V) Answer the following question in Brief. **(5 *2=10 marks)**

1. Explain features of Decentralization of authority.
2. State the process of Control system.

Q2.B) Explain the meaning of Need Hierarchy theory of motivation and its stages. **(10 marks)**

OR

Q2W) Explain in details the different types of Communication Process. **(10 marks)**

Q3C) Explain the Importance of Planning. **(10 marks)**

OR

Q3X) Explain Decision making process in an organization. **(10 marks)**

Q4D) What is means by Centralization of Authority and its Features? **(10 marks)**

OR

Q4Y) Explain the process of Communication process and its barriers. **(10 marks)**

Q5E) Explain the Benefits and Limitation of Management by Objectives. **(10 marks)**

OR

Q5Z) What are the essential required for effective Control System? **(10 marks)**

Roll No: ----------

Total No. of Questions: 5

Total No. of pages: 2

BCA Semester End Examination

Computer Networks (BCA402)

Semester IV

Duration: 2 Hrs.

Maximum Marks:50

Instructions:

1. *All Questions are compulsory*
2. *Figures to right indicate marks*
3. *Start each new question on a fresh page*

Q1. A) Choose the Correct answer **(5 X 1 =5 Marks)**

1. Bluetooth is an example of

   a) Personal Area Network
   b) Local Area Network
   c) Virtual Private Network
   d) Metropolitan Area Network

2. Which transmission media has the highest transmission speed in a network?

   a) Coaxial Cable
   b) Twisted Pair Cable
   c) Optical Fiber
   d) Electrical Cable

3. CRC stands for

   a) Cyclic Redundancy Check
   b) Code Repeat Check
   c) Code Redundancy Check
   d) Cyclic Repeat Check

4. The Network layer concerns with

   a) bits
   b) frames
   c) packets
   d) data

5. Which layer functions as connection between user support layers and network support layers?

   a) Network Layer
   b) Physical Layer
   c) Transport Layer
   d) Session Layer

B) Answer the following in one or two lines **(5 X 1 = 5 Marks)**

1. List out the unguided media
2. Write any two functions of data link layer.
3. Define Subnets.
4. Define Socket address.
5. What is Symmetric Key?

Q2. Answer the following **10 Marks**

A) What is Hamming Distance and Give example 2 Marks

B) Write short note on types topology 3 Marks

X) Explain any five layers in OSI Reference Model 5 Marks

OR

Y) Describe Twisted Pair Cable 5 Marks

Q3. Answer the following **10 Marks**

A) What is parity give example 2 Marks

B) Write short note on Character count 3 Marks

X) Discuss Sliding Window Protocol in detail 5 Marks

OR

Y) Describe Synchronous Optical Network (SONET) 5 Marks

Q4. Answer the following **10 Marks**

A) Write any two functions of Network Layer 2 Marks

B) Write short on Shortest Path Routing Algorithm 3 Marks

X) Explain IEEE 802.3 Ethernet Standards 5 Marks

OR

Y) Discuss Transmission Control Protocol Segment in detail 5 Marks

Q5. Answer the following **10 Marks**

A) Write any six generic top-level domain names 2 Marks

B) Write short note on User Datagram Protocol Services 3 Marks

X) Describe Simple Mail Transfer Protocol 5 Marks

OR

Y) Explain Data Encryption Standard 5 Marks

Roll No: _____

Total No: of Questions: 5 **Total No: of pages: 2**

B.C.A Semester End Examination

Software Engineering (BCA 401)

Semester IV

Duration: 2 Hrs. Maximum Marks: 50

Instructions: *1. Figure to the Right Indicates Full marks*
2.Draw neat diagram wherever necessary with pencil
3.Write a Proper assumption for UML Diagram

Q1.A Select the appropriate option and rewrite the statement **(5*1=5)**

i) Select the option that suits the Manifesto for Agile Software Development
a) Individuals and interactions b) Working software
c) Customer collaboration d) Responding to change

ii) Spiral model was developed by
a) Victor Bisili b) Berry Boehm
c) Bev Littlewoods d) Roger Pressman

iii) Which of the following is not a diagram studied in Requirement Analysis ?
a) Use Cases b) Entity Relationship Diagram
c) State Transition Diagram d) Activity Diagram

iv) How many diagrams are here in Unified Modelling Language?
a) six b) seven
c) eight d) nine

v) Which of the following describes "Is-a-Relationship" ?
a) Aggregation b) Inheritance
c) Dependency d) None of these

Q1.B Answer the following **(5*1)**

i) Define UML
ii) Differentiate between Extend and Include
iii) Differentiate between Join and Fork
iv) Who developed the Use cases
v) MVC stands for

Q2 Answer the following **(10)**

A) Explain Software Quality . (2)

B) Describe Characteristic of Software Process (3)

X) Draw activity diagram for Flipkart the online Shopping portal (5)

OR

Y) Explain Agile Methodology . (5)

Q3) Answer the following **(10)**

A) Write the Steps of Software Requirement Specification (SRS) (2)
B) Explain the Fact Finding Technique and Feasibility Study (3)

X) Draw a Sequence Diagram for Social media (Facebook) (5)

OR

Y) Draw a Class Diagram for Shaadi.com (5)

Q4) Answer the Following **(10)**

A) Explain Project Scheduling (2)

B) Explain the features of UML (3)

X) Draw use case diagram for Blood Collection Center (Pathology) (5)

OR

Y) Explain Spiral Model (5)

Q5) Answer the following **(10)**

A) Differentiate between Aggregation and Composition (2)
B) Explain the deployment and Component Diagram (3)

X) Draw and explain Collaboration Diagram for Restaurant Billing System (5)

OR

Y) Explain State Chart Diagram with an example (5)

Roll No:

Total No: of Questions: 06 Total No: of pages: 02

B.C.A. Semester End Examination

Technical Writing Skills
Semester 4

Duration:02 Hrs. **Maximum Marks:50 Marks**

Instructions: *1) Figures to the right indicate maximum marks allotted.*
2) Provide sufficient margin space in the answer-book for recording marks.
3) Enter the appropriate main & sub-question numbers in the answer-book.

Q. 1) Answer the following questions. (5*2=10)

A) You are the chairman of Aditya Icecreams. One of your employees Miss Veena Naik needs your reference to be produced at an event she is attending. Draft a reference letter for them.

B) You have started a new boutique. Draft an advertisement for the advertising your firm.

Q.2) A) A committee was appointed to check the availability of raw material to start a factory in Bilmola town. Draft a report based on the findings. (10*1=10)

OR

Q.2) B) Write a report of the android workshop that your college organized recently as a cultural secretary of college.

Q. 3) A) As a staff secretary draft an monthly report of the activities conducted by the staff for the month of July. (10*1=10)

OR

Q. 3) B) Draft a report of the activities carried out by I.T. club of your college.

Q) 4) A) You have seen an advertisement on newspaper about a company asking for the applicants for the post of News reporter. Write an application letter applying for the same. Your name is Vitthal/Vedita Desai. (10*1=10)

OR

Q) 4) B) You are Priti/ Pranav Sharma. Write a letter to a local daily commenting on the increase in the rate of robbery in your area

Q 5) Answer any two of the following questions. (5*2=10)

A) Write a news article about youth power in politics.

B) Your locality has issues related to water supply. Write a letter to P.W.D. department complaining about the same.

C) One of your employees has recently lost his wife. Write a letter consoling him for the same.. You are the Director of Alcon Hotels.

D) Write a letter to your friend wishing them on the success in their exams. You are Shital/ Shoaib Malik..

Roll No:

Total No: of Questions: 5 **Total No: of pages: 4**

BCA Semester End Examination

Data Analysis and Statistical Technique

Semester No: IV

Duration: 2 Hrs. Maximum Marks: 50

Instructions: 1) All Questions are Compulsory.

2) Figures to right indicate marks.

3) Start each new question on a fresh page.

4) On request graph will be provided.

5) Non programmable calculators are allowed.

Q.1 A) Answer the following: **(5x1=5)**

i. For 1, 2, 3, 4, 5, 6 the median is _____

ii. Define probability.

iii. Second quartile is given by Q_2 = _____

iv. Mean of Poisson distribution is given by _____

v. Range is given by R = _____

B) Answer the following: **(5x1=5)**

i. Mean E(X) = _____

ii. For 5, 6, 3, 2, 9, 12, 15, 12, 7, 12, the mode is _____

iii. Define random experiment.

iv. Standard deviation SD = _____

v. Probability is given by the formula P(A) = _____

Q.2. Answer the following: **(10)**

A) i. Calculate median for the following :

Class-intervals	0-10	10-20	20-30	30-40	40-50
Frequency	16	24	35	25	20

ii. For a Binomial distribution , mean = 5 and s.d. = 2. Find n and p.

OR

B) i. Find the spearman`s coefficient of correlation for the following **(10)**

R_1	4	2	3	1	6	5
R_2	2	1	5	2	6	4

ii. A die is thrown. Find the probability of getting :

a) a number multiple of 2 or 3

b) a number ≤ 2 .

c) a number up to 4.

Q.3. Answer the following: **(10)**

A) i. In a district 400 persons were smokers from a sample of persons. After heavy duty on tobacco, 400 persons out of a sample of 600 persons were smokers. Can you find a significance decrease in the proportion of smokers due to Heavy duty? [Test at 1% level of significance]

ii. Find the mean deviation for the following data

x	-2	-1	0	1	2	3	4
f	2	3	3	4	3	3	2

OR

B) i. Draw the histogram for the following data and hence find the mode graphically **(10)**

Marks	0-10	10-20	20-30	30-40	40-50
No. of refrigerators	6	11	15	8	3

ii. For a Poisson distribution with $\lambda = 3$, find P(2), P($x \leq 3$), given $e^{-3} = 0.05$. **(10)**

Q.4. Answer the following:

A) i. Calculate mode for the following:

X	5	8	10	12	14
F	2	7	13	18	10

ii. Calculate variance and standard deviation for the following

X	0	2	4	6	8
F	2	3	5	6	4

OR

B) i. Find mean and variance for a Binomial distribution If **(10)**

a) n = 100, p = 0.1

b) n = 12, p = 1/3

ii. Explain simple random sampling.

Q.5. Answer the following: **(10)**

A) i. A random sample of size 400 has sample proportion 0.75. can we say that it is drawn from a population with proportion 0.8, at 5% level of significance?.

ii. Draw less than cumulative frequency from the following data and also find 2 quartiles.

Wages	30-40	40-50	50-60	60-70	70-80	80-90	90-100
F	1	3	11	21	43	32	9

OR

B) i. The probability density mass function of a random variable 'X' is given below **(10)**

$P(x) = 1/8$ when $x = -2 \quad -1$

$= 1/4$ when $x = 0$

$= 1/2$ when $x = 1$

Find : **a)** $P(X > -1)$ **b)** $P(X < 0)$

c) $E(X)$

ii. Find coefficient of correlation for the following

R1	3	1	5	4	2
R2	5	2	4	3	1

Roll No:

Total No of questions: 5

Total No of pages: 4

Semester End Examination

Statistical Techniques II

Semester IV

Duration: 2Hrs.

Maximum Marks: 80

Instructions:

1. All questions are compulsory. However internal choice has been provided.
2. Figures to right indicate full marks.
3. Use of non-programmable calculator is allowed.

Q1) Answer the following.

a) Explain the concept and utility of measuring correlation between two variables. (3)

b) The variable x and y are negatively correlated. The regression equation of x on y is $32x+10y+3=0$ and that of y on x is $5x+y+15=0$. Find the coefficient of correlation. (6)

c) Compute rank correlation from the following data. (7)

Marks	1	2	3	4	5	6	7	8
Maths	42	37	28	51	56	40	25	61
Statistics	45	30	10	35	46	55	58	70

OR

d) Explain the concept of 'regression'. How does it differ from correlation?(3)

e) The regression equation of profit(x) on sales (y) of a certain firm is $3y-5x-108=0$. The average sales of firm was ` 44,000 and the variance of the profit was $9/16^{th}$ of the variance of sales. Find the coefficient of correlation between sales and profit. (7)

f) For a bivariate data,

$N = 10$, $\sum x = 20$, $\sum y = 40$, $\sum xy = 75$, $\sum x^2 = 58$, $\sum y^2 = 192$

Calculate coefficient of correlation. (6)

Q2) Answer the following.

a) What are random experiments? Write any two exclusive events of a sample space. (3)

b) The watches produced by a certain firm include only one defective watch in every 500 watches, 5 packs of 25 watches each are considered. Find the probability that in 5 packets, there is

1) At least one defective watch (7)

2) More than 2 defective watches

(Given:- $e^{-0.25}$=0.7788, $e^{-0.4}$ = 0.6703, $e^{-2.5}$= 0.0821)

c) Fit a trend line for the following data hence estimate the sales in 2015. (6)

year	2008	2009	2010	2011	2012	2013	2014
Sales (lakhs)	10	14	17	20	26	25	32

OR

d) Define the terms:

a) Sample space (3)

b) 2) Mutually exclusive events

e) There are 100 students in a class. 50 pass in Mathematics, 40 in Economics and 10 in both. If a student is selected at random, what is the probability that he has passed in

1) At least one subject (6)

2) Only one subject.

f) A man draws 2 balls from a bag containing 3 white and 5 black balls. If he is to receive 14 for every white ball and ` 7 for every black ball drawn. What is his expectation? (7)

Q3) Answer the following.

a) Calculate the value of Q_1 and Q_3 if mean of normal variate 15 and standard deviation is 2. (3)

b) The odds in favor of A winning a game of chess against B are 5:2 , if three games are played, what is the probability of A's winning at least one game. (6)

c) The mean weight of 50 students is 45 kg with a standard deviation of 15 kg. Assuming distribution of weight to be normal, find

i) the number of students with weight between 30kg and 60kg,

ii) the probability of students with weight more than 60kg. (7)

(Area under the standard normal curve between t = 0 to t = 1 is 0.3413)

OR

d) For a Binomial distribution mean =3 and variance =1.5. Find n and p. (3)

e) A large consignment of tennis balls is assumed to have 20% substandard balls. A samples of 400 balls selected from it. Find the probability that % of substandard balls in the sample is

i) at most 16%, ii) at least 22%. (6)

(Area under the standard normal curve between t = 0 to t = 2 is 0.4772 and between t = 0 to t = 1 is 0.3413).

f) The height of a group of 2000 students is normally distributed with mean 165 cms and standard deviation 5 cms. How many students have height of 171 cms? (Area under the standard normal curve between t = 0 to t = 1.2 is 0.3849) (7)

Q4) Answer the following.

a) Write short note sampling methods (3)

b) A school wishes to estimate the average weight of students. A random sample of 25 students is selected. The average is found to be 40 kg with standard deviation of 5 kg. Find 95% and 99% confidence intervals. (6)

c) A automatic can-filling machine on an average fills 180 ml of milk with a standard deviation of 2 ml. Find the probability that the average volume of milk filled in 100 cans from a lot is i) less than 179.9 ml ii) more than 180.1 ml

(Area under standard normal curve between t = 0 to t = 0.5 is 0.1915) (7)

OR

d) Explain the terms estimate and estimator. (3)

e) The probability that an individual suffers bad reactions from a particular injection is 0.01. Find the probability that out of 500 individuals

i. exactly 2 suffer the reaction

ii. more than 2 will suffer the reaction.

(Given:- e^{-5}=0.0067, $e^{-0.5}$=0.6065) (6)

f) A test of breaking strength of 6 ropes manufactured by a company showed mean breaking strength of 750 kg. and standard deviation of 20 kg. Find 95% confidence limits for the mean breaking strength of the rope manufactured by company. (7)

Q5) Answer the following.

a) Explain the terms

i) Type I error

ii) Level of significance (3)

b) The height of 10 students selected at random, had a mean height of 158 cms and variance of 39 cms. Assuming level of significance at 5%, test the claim that the students of the population are on the average of height less than 162.5 cms. (7)

c) The probability mass function of a random variable x is

$P(x) = 1/2$ when when $x = 2$

$= 3/10$ when $x = 5$

$= 1/5$ when $x = 6$

$= 0$ otherwise.

Find i) P(x is even), ii) P(x>3).

OR

d) Write any five properties of Normal curve. (3)

e) A random sample of 400 iron rods indicated that the average length of rod is 10 cms. Can this be regarded as a sample from a large population with a mean of 10.2 cms and standard deviation of 2.25 cms at 1 % L.O.S.? (7)

f) It is observed that 30% of students in a class are swimmers. If 3 students are selected at random from this class, what is the chance that only one of them is a swimmer? (6)

XXXXXXXXX

Roll No:

Total No: of Questions :05

Total No: of pages: 02

S.Y.B.C.A Semester End Examination

Title of the Paper with Paper No: COMPUTER NETWORKS (BCA 402)

Semester: IV

Duration: 2Hours. **Maximum Marks: 50**

1)All questions are compulsory
2)Figures to the right indicate maximum marks allotted
3)Start each new question on a fresh page
4)Enter the appropriate main and sub-question numbers in the answer book

Q1.A) Complete the statement by using appropriate word(s): [5*1]Marks

i. When 2 or more data bits are changed in a data unit during the transmission the error is called_____.

ii. The combination of _____ and _____ is often termed as the local address of the local portion of the IP address.

iii. _____ transmission media has lower attenuation and can carry signal to longer distances without using amplifiers and repeaters in between.

iv. 14.23.120.8 IP address belongs to _____ class.

v. In_____ protocol, the sender sends one frame, stops until it receives confirmation from the receiver and then sends the next frame.

Q1.B)Answer The Following Questions Briefly [5*1]Marks

i. Define Bit Stuffing.

ii. Give one point of difference between Virtual Circuit and Datagram.

iii. Explain briefly usage of DSL.

iv. Name the two major types of Twisted pair wires.

v. Give an example of Even Parity.

P.T.O.

Q2)Answer The Following Questions. [10Marks]

i. Write a short note on Coaxial Cable 2Marks

ii. Explain the working of SMTP Protocol using some commands. 3Marks

iii. Draw and explain the frame format for HDLC Protocol. 5Marks

Q3)Answer The Following Questions. [10Marks]

i. Differentiate between Connection oriented and Connectionless service. 2Marks

ii. Explain the Manchester data encoding technique with an example. 3Marks

iii. Draw the OSI reference model and briefly explain the functionalities of all layers. 5Marks

Q4)Answer The Following Questions [10Marks]

i. List down **ANY TWO** functions of Transport layer. 2Marks

ii. Explain the working of Go Back N ARQ Protocol with suitable diagrams. 3Marks

iii. Illustrate with an example working of Distance Vector Routing Algorithm. 5Marks

Q5)Answer The Following Questions [10Marks]

i. Explain the term Subnetting with the help of example. 2Marks

ii. Draw and explain explain UDP Header format. 3Marks

iii. Explain the working of Domain Name System. 5Marks

******END******