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BCA SEM IV

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Question Papers

IV Semester End Examination, APRIL 2018

Class:SYBCA

Sub: SOFTWARE ENGINEERING

Roll No.:

Max marks: 50

Duration: 2 HOURS

Instructions as per subject:

- 1) Figure to the right indicates full marks
- 2) Draw neat diagram wherever necessary
- 3) Write a proper assumption for UML diagrams

Q1.A Answer the following in one or two lines.

(5 *1=5)

1. Define Software
2. Define Software process model
3. Define Actor in use case diagram
4. Define Class attributes
5. Define Activation bar

Q 1.B Answer the following

(5*1)

1. Define requirements
2. Difference between functional and non-functional requirements
3. Define Swim lane
4. Define SRS document
5. Mention any four UML diagrams

Q 2 Answer the following

(10)

- A. Explain prototype model with diagram (3)
- B. Explain iterative model with diagram (3)
- C. Explain any four classification of software (4)

Q 3 Answer the following

(10)

- A. What are problems with requirements using natural language (3)
- B. Draw use case diagram for airline reservation system (3)
- C. Explain Association (4)
 - a. Multiplicity of Associations
 - b. Role Names



Q 4 Answer the following

(10)

- A. Explain any two combining fragments in sequence diagram (2)
- B. Explain any three types of feasibility study (3)
- C. Explain fork and join nodes with diagram (2)
- D. Draw a state machine diagram for phone call (3)

Q 5 Answer the following

(10)

- A. What is class diagram (1)
- B. Explain four techniques used in requirements elicitation (4)
- C. What are the Purpose behind a SRS document (2)
- D. Explain network diagram and critical path in project scheduling (3)



IV Semester End Examination, APRIL 2018

Class: SYBCA

Sub: Technical Writing Skills

Roll No.: _____

Max Marks: 50

Duration: 02 HOURS

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 the following questions

(5*2=10Mrks)

- A. Write a short note on the Attention Line.
- B. Readers Quest Library, Panjim, needs a Librarian. Write an advertisement to be published in the 'Situation Vacant' column of a local newspaper.

Q2. Answer any one of the following.

(10 Marks)

- A. Assume you are the Assistant Manager of a factory. The supervisors in the factory have complained to your General Manager about workers' indiscipline. You have been appointed to study the problem and draft a report. Draft a report with authority, reference, procedure and recommendation to be submitted to the General Manager.
- B. Assume you work in a Public Limited company that is considering a proposal to establish a new factory in Goa. The Managing Director of the company has appointed you to head a committee to study the ground realities and draft a report about the suitability of this project. Draft an appropriate report.

Q3. Answer any one of the following.

(10 Marks)

- A. Write a detailed note on the contents of a business report.
- B. What are the main characteristics of the hanging paragraph form layout? Explain with a diagrammatic representation.

Q4. Answer any one of the following

(10 Marks)

- A. You are Diksha\ Pradesh Kanekar, Head clerk, Sunshine Public school, Quepem. Write a letter to Saraswati Stationary asking them to send their catalogue and terms of supply of



stationary items, as you are likely to place an order for 200 books, 500 pens and 100 Dictionaries.

- B. Write a newspaper article about the rise of competitive examinations in the Indian educational scenario.

Q5. Answer any one of the following.

(10 Marks)

- A. Draft an application letter in response to the following advertisement:
“Applications are invited for the post of Manager (Theatre), the applicant should have a Masters Degree, with at least 1 year of experience in Theatre Management, should have good command over English and Konkani. Applications should reach Executive Director, Performing Arts Council, Mapusa, Goa till 01/05/2018”.
- B. Draft a letter of congratulation to Mr. Kerkar who has recently received a prestigious award from the Government of Goa for his outstanding work in the field of Social services

Roll No:

Total No: of Questions: 5

Total No: of pages: 4

BCA Semester End Examination April 2018

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. Formula for coefficient of correlation for repeated rank is _____

ii. Population is defined as _____.

iii. First quartile is given by $Q_1 =$ _____

iv. Statement of addition theorem of probability is _____

v. Coefficient of Range is given by the formula _____

B) Answer the following:

(5x1=5)

i. $\bar{x} =$ _____

ii. For the values 5, 6, 3, 2, 6, 5, 3, 6 the mean is _____

iii. $(\sigma_x) =$ _____

iv. Mean for random variable is given by _____

v. Variance of binomial distribution is given by _____



Q.2. Answer the following:

(10)

A) i. Calculate mode for the following distribution

Class interval	0-5	5-10	10-15	15-20	20-25
Frequency	15	23	25	22	10

ii. In a district 400 persons were smokers from a sample of 500 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]

OR

B) i. Calculate variance and standard deviation for the following: (10)

Class-intervals	0 – 20	20 – 40	40 – 60	60 – 80
Frequency	1	3	4	2

ii. A sample of size 100 children have a mean weight of 50.6 kg. Can it be regarded as a random sample from a large population with mean weight of 50 kg and standard deviation of 5 kg at 5 % level of significance?

Q.3. Answer the following:

(10)

A) i. Find the correlation coefficient between the variables x and y for:

x	1	2	3	5	4	3
y	2	4	5	5	3	1



- 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
- i) an odd number ii) a number ≤ 2 .
- iii) a multiple of 2 or 3 iv) a number up to 5.

OR

- B) i.** Find the following bivariate data find coefficient of regression. **(10)**

x	9	7	11	5
y	6	4	8	2

- ii. The probability density mass function of a random variable 'X' is given below

$$P(X) = 1/5 \quad \text{when } x = 0, 1$$

$$= 1/8 \quad \text{when } x = 2$$

$$= 1/4 \quad \text{when } x = 3, \text{ then Find : a) } P(X < 3) \quad \text{b) } E(X)$$

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

- A) i.** Draw histogram and frequency polygon for following data

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

- ii. Explain Cluster sampling.

OR



B) i. Calculate median for the following :

(10)

Class-intervals	0-20	20-40	40-60	60-80	80-100
Frequency	10	23	30	26	11

ii. Explain simple random sampling.

Q.5. Answer the following:

(10)

A) i. Define hypothesis , null hypothesis and alternative hypothesis,

ii. **a)** Define correlation

b) Find mean and variance of a binomial distribution if $n = 12$, $p = 1/3$ and $n = 10$, $p = 2/5$

OR

B) i. When a coin is tossed 50 times, head appears 15 times. Does this mean that

(10)

The coin is biased? Use 5% level of significance.

ii. **a)** Define sample

b) For a poisson distribution, if $P(1) = P(2)$, Find the mean.



IV Semester End Examination, APRIL 2018

Class: SYBCA

Sub: Computer Networks (BCA402) Roll No:

Max Marks:50

Duration: 2 HOURS

Instructions:

- 1) All Questions are Compulsory
- 2) Figures to the right indicate full marks
- 3) Start each new question on a fresh page
- 4) Draw diagrams wherever necessary

Q1). A. Fill in the Blanks:

(5 X 1 = 5 Marks)

- i) _____ transmission media has the highest transmission speed in a network.
- ii) CRC stands for _____.
- iii) The number of bits required for an IPv₄ address is _____.
- iv) The network 198.78.41.0 is a _____ layer.
- v) Repeater function in the _____ layer.

B. State whether the following statements are True or False: (5 X 1 = 5 Marks)

- i) A satellite is a type of wired communications media.
- ii) Transport layer of OSI model also called end-to-end layer.
- iii) UDP provides a connection-oriented reliable service for sending messages.
- iv) The Internet is an example of circuit switched network.
- v) Router operates in Network layer of OSI Reference Model.

Q2). Answer the following

10 Marks

- A. What are the responsibilities of data link layer?
- B. Differentiate STP and UTP
- C. Explain the OSI architecture with neat diagram

2 Marks

3 Marks

5 Marks

Q3). Answer the following

10 Marks


- A. Write any two functions of Network Layer
- B. Explain TCP segment format in detail
- C. Describe the link state routing algorithm with an example

2 Marks

3 Marks

5 Marks





Q4). Answer the following

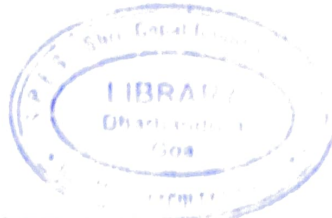
10 Marks

- A. Find hamming distance between the vectors 11111111 and 10000111 2 Marks
- B. Explain IEEE 802.3 Ethernet Standards 3 Marks
- C. Discuss HDLC protocols in detail 5 Marks

Q5). Answer the following

10 Marks

- A. What are the disadvantages of DES algorithm? 2 Marks
- B. Write short note on User Datagram Protocol Services 3 Marks
- C. Describe the MIME and POP3 protocols in detail 5 Marks



IV Semester End Examination, APRIL 2018

Class: SYBCA

Sub: Technical Writing Skills

Roll No.: _____

Max Marks: 50

Duration: 02 HOURS

Instructions as per subject:

- 1) Figures to the right indicate maximum marks allotted
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- 3) Enter the appropriate main & sub-question numbers in the answer-book

Q1. Answer the following questions

(5*2=10Marks)

- A. Write a short note on the confidential notation.
- B. Draft a memo of warning to be issued to one of the employees of your company who frequently reports late to the work.

Q2. Answer any one of the following.

(10 Marks)

- A. The toy manufacturing factory, of which you are the manager, has been badly damaged in a fire. Draft a report about your preliminary findings and suggestions to avoid such disasters in the future. The report should be addressed to the Chairman of the Board of Directors of your company.
- B. Assume you are the General Secretary of the Students Council. Draft a report about the Fun Week Celebration in your college that concluded a few days ago.

Q3. Answer any one of the following.

(10 Marks)

- A. List and briefly explain the characteristics of any five types of reports.
- B. What are the main characteristics of the indented form of letter writing layout? Explain with a diagrammatic representation.

Q4. Answer any one of the following

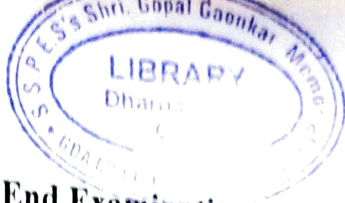
(10 Marks)

- A. You are Aranza Ajay Govekar and have applied for the post of manager in the West wind co., Draft a letter requesting Mr. Anant to write a reference letter for you.
- B. You have received your Degree in Interior Decoration. Draft an application letter for the post of an Interior Designer to the Saptarishi Builders, Cortalim.

Q5. Answer any one of the following.

(10 Marks)

- A. You are Kiran\ Rahul Naik, Write a letter to your friend congratulating him for participating and winning prizes in three different events at the National Sports Meet held at New Delhi recently.
- B. As a Principal of college draft an open testimonial regarding the competence and dedication of one of your clerks, who has been promoted, for better prospects.

**IV Semester End Examination, APRIL, 2018**

Class: SYBCA

Sub: SOFTWARE ENGINEERING

Roll No.:

Max marks: 50

Duration: 2 HOURS

Instructions as per subject:

- 1) All Questions are compulsory
- 2) Figure to the right indicates full marks
- 3) Draw neat diagram wherever necessary

Q 1.A Answer the following in one or two lines.

(5*1=5)

1. Define UML
2. Define Use case diagram
3. Define Class operation
4. Define Feasibility study
5. Define software engineering

Q 1.B Answer the following

(5*1)

1. Define requirement validation
2. Define Ternary association
3. Define Domain requirements
4. What are the types of feasibility study
5. What are the different phase of requirement engineering process

Q 2 Answer the following

(10)

- A. Explain requirements Elicitation (3)
- B. Explain water fall model (3)
- C. Explain any four characteristics of software (4)

Q 3 Answer the following

(10)

- A. Explain user and system requirements (3)
- B. Draw use case diagram for online shopping system (4)
- C. Explain dependency and generalization (3)

Q 4 Answer the following

(10)

- A. What is importance of feasibility study (1)
- A. Draw a sequence diagram for returning book to the library (3)
- B. Draw activity diagram for the following Scenario: (4)

“Online customer can browse or search items, view specific item, add it to the shopping cart, checkout; User can view shopping cart at any time. Checkout is assumed to include user registration and login”

C. Explain transition and state in state machine diagram (2)

Q 5 Answer the following

A. Explain Spiral model with diagram (10)

B. Explain any 3 characteristics of SRS document (4)

C. What is Gantt Chart and also explain the steps of creating a Gantt chart (3)



Roll No:

Total No: of Questions: 5

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BCA Semester End Examination April 2018

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. Mean of poisson distribution is given by _____
- ii. Statement of multiplication theorem is _____
- iii. For random variable $V(X) =$ _____
- iv. Formula for coefficient of correlation for non repeated rank is _____
- v. Variance of Binomial distribution is _____

B) Answer the following:

(5x1=5)

- i. Define probability.
- ii. For 1, 2, 3, 4, 5 the mean is _____
- iii. Mean deviation is given by _____
- iv $\bar{y} =$ _____
- v. Second quartile is given by the formula _____

(10)

Q.2. Answer the following:

A) i. Find quartile deviation and its coefficient for the following

Roll no.	1	2	3	4	5	6	7
Marks	12	15	20	25	31	40	60

ii. Define hypothesis, type 1 error and type 2 error

OR

(10)

B) i. Find Q_1 and Q_2 for the following

Weight	150-153	153-156	156-159	159-162	162-165	165-168	168-171
Students	13	14	15	18	16	13	11

ii. A soap opera on TV claims a TRP of 4% per week. In a random survey of 30 weeks, it is found that, the show had an average TRP of 3.5%, with the standard deviation of 1%. Is the claim of the show justified at 1% level of significance.

Q.3. Answer the following:

A) i. Find the following bivariate data find coefficient of regression .

(10)

x	2	3	4
y	3	5	7

ii. Three coins are tossed. Find the probability of getting

i) No Head

ii) Two Heads

iii) At least two heads

iv) At most two heads

OR

ii. The probability that an individual will have a reaction after a drug is injected is 0.0001. if 20000 individual are given the injection, find the probability that more 2 have a reactions. $(e^{-2}) = 0.135$