

Enrolment No.

SOS23801020035



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Pimpri Chinchwad University

Established under Govt. of Maharashtra Act No. V of 2023
Sate, Maval (PMRDA) Dist - Pune, Maharashtra - 412 106.



End-Semester Examination – Regular May /June - 2024

Program: BCA/B.Sc.-CS (Cyber Security)

Batch: 2023-2027

Semester: II

Maximum Marks: 60 marks

Time: 2.5 Hrs.

Course Name: Software Engineering

Course Code: UBC114/UBS113E

Course Outcomes (CO):

1. Compare and contrast various Software Engineering models
2. Decide on an appropriate process model for developing a software project.
3. Classify software applications and Identify unique features of various domains.
4. Prepare System Requirement Specification (SRS) for the given problem.
5. Design and analyze Data Flow diagrams.

Instructions:

- Draw neat diagrams wherever required
- All questions are compulsory

Question	CO	BL	Marks
Q.1) Attempt ANY TWO of the following			(10 marks)
a) Explain system engineering in detail.	CO1	BL1	5
b) Describe the term system component.			5
c) How system be divided into various types?			5
Q.2) Attempt ANY TWO of the following			(10 marks)
a) Explain the importance of software engineering.	CO2	BL2	5
b) Define the Mc Call's quality factors.			5
c) What are the characteristics of software?			5
Q.3) Attempt ANY TWO of the following			(10 marks)
a) Explain SDLC activities in detail.	CO3	BL2	5
b) Differentiate between the waterfall and RAD model.			5
c) Explain in detail Boehm's spiral model for software life cycle			5
Q.4) Attempt ANY TWO of the following			(10 marks)
a) Write the distinct steps in the requirements engineering process.	CO4	BL3	5
b) What are the non-functional requirements of software?			5
c) Explain the economic and technical feasibility study in the requirement engineering.			5
Q.5) Attempt ANY One of the following			(10 marks)
a) Draw an ER diagram for the following Case Study. The Online Railway Reservation System (ORRS) is designed to facilitate the booking of train tickets, management of train schedules, and handling of passenger information through an online platform. The system allows passengers to search for trains,	CO5		10
		BL3	

book tickets, make payments, and receive booking confirmations electronically. It also includes administrative functionalities for managing train schedules, routes, and bookings.

b) Explain the elements and advantages of a Data Dictionary.

10

Q.6) Attempt ANY One of the following

a) Draw context-level DFD for the following Case Study.

The Online Doctor Appointment System is designed to facilitate the booking and management of appointments with doctors through an online platform. The system aims to streamline the process for patients to find available doctors, schedule appointments, and receive confirmation notifications. It also allows doctors to manage their schedules and view patient information efficiently.

CO5

(10 marks)

10

BL3

b) Define the terms Decision Tree and Decision Table in detail.

10



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Program: Bachelor of Computer Science (Cyber Security) (BSC(CS))

Batch: 2023-24

Course: Database Management System (Semester: -II)

Course Code: BSC202

Day: Monday

Date: 18th March 2024

Duration: 1 hr.

Instructions: Paper has three Sections (A, B and C). Each Section Carries 10 Marks.

- Section A has 5 Questions (All Questions are Compulsory and Each Question Carries 2 Marks.)
- Section B has 3 Questions (Attempt any Two and Each Question Carries 5 Marks.)
- Section C has 2 Questions (Attempt any One Question. Each Question Carries 10 Marks.)
- Draw Neat and Clean Diagrams where required.
- Give Proper assumptions where required.

SECTION A (10 Marks)			
Question	BTL	CO	Marks
Q.1) Define DBMS.	L1	C01	2
Q.2) Why Database users are required.	L1	C01	2
Q.3) Define Entity.	L1	C02	2
Q.4) What is Generalization.	L2	C02	2
Q.5) Define SQL.	L1	C01	2
SECTION B (10 Marks)			
Q.1) Explain Database Users with their types.	L2	C01	5
Q.2) Identify the various types of Attributes with suitable example.	L3	C02	5
Q.3) Explain the Types of Relationship.	L2	C02	5
SECTION C (10 Marks)			
Q.1) Explain Relational Algebra and its various Operations.	L2	C03	10
Q.2) Develop the Entity Relationship Diagram for the below mentioned case. Passengers can book their tickets for the train in which seats are available. For this, passenger has to provide the desired train number and the date for which ticket is to be booked. Before booking a ticket for a passenger, the validity of train number and booking date is checked. Once the train number and booking date are validated, it is checked whether the seat is available. If yes, the ticket is booked with confirm status and corresponding ticket ID is generated which is stored along with other details of the passenger. After all the available tickets are booked, certain numbers of tickets are booked with waiting status. If waiting lot is also finished, then tickets are not booked and a message of non-availability of seats is displayed. The ticket once booked can be cancelled at any time. For this, the passenger has to provide the ticket ID (the unique key). The ticket ID is searched and the corresponding record is deleted. With this, the first ticket with waiting status also gets confirmed.	L3	C03	10

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End-Semester Assessment – Nov/Dec- 2024

Program : B.Sc (Cyber Security)

Semester: II

Maximum Marks: 30 marks

Time: 1.25 hrs.

Course Name: User Experience and Design

Course Code: UETAD102

Course Outcomes (CO):

1. Know user- centered design, user -centered methods in design, graphic design on screens, simulation and prototyping techniques, usability testing methods, interface technologies.
2. Understand iterative user-centered design of graphical user interfaces.
3. Apply the user Interfaces to different devices and requirements.
4. Create high quality professional documents and artifacts related to the design process.
5. Learn the skill of sketching as a process for user experience design.

Instructions:

- All questions are compulsory.
- Figures to be right indicate full marks. etc.

Question	CO	BL	Marks
Q1) Define User Interface Design (UI). What are its primary objectives in creating effective digital experiences?	CO1	2	5 Marks
Q.2) Explain the importance of user research in the UX design process.	CO2	2	5 Marks
Q.3) Explain a working prototype and its significance in the UX design process.	CO3	2	5 Marks
Q.4) Explain the challenges designers may face in gathering and analyzing user data. What strategies can be employed to overcome these challenges? OR	CO4	2	5 Marks
Q.4) Explain the process of transforming user data into actionable insights.	CO4	2	5 Marks
Q.5) Discuss the importance of content strategy in a multi-device project. OR	CO5	2	10 Marks
Q.5) Demonstrate how consistency in design elements (e.g., navigation, branding) can enhance the user experience across different devices.	CO5	2	10 Marks



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Program: Bachelor of Science (CS)

Batch: 2023-24

Semester : II

Course : Software Engineering

Course Code: BSC204

Day: Monday

Maximum Marks: 30 marks

Date: 19/03/2024 Time: 1 hr.

Instructions:

- Draw neat diagram wherever necessary
- Use of any digital device is not allowed

SECTION A (10 marks)

(All questions are compulsory)
(Each question carries 2 Marks)

Question	BTL	CO	Marks
Q.1) Any two characteristics of software engineering?	L1	CO1	2
Q.2) List out the types of system?	L2	CO2	2
Q.3) List out the software engineering layers?	L2	CO2	2
Q.4) What is the system component ?	L2	CO2	2
Q.5) Name the software engineering layers? <i>What is an e.s.</i>	L2	CO2	2

embedded system
SECTION B (10 marks)

(Attempt any Two questions from three)
(Each question carries 5 marks)

Q.1) Give an overview of the software crisis?	L2	CO2	5
Q.2) System engineering basic components include?	L1	CO3	5
Q.3) What are the good attributes of software?	L2	CO2	5

SECTION C (10 marks)

(Attempt any One question from two)
(Each question carries 10 marks)

Q.1) Detailed differentiation between system engineering and software engineering?	L3	CO3	10
Q.2) Discuss software engineering advantages and disadvantages?	L3	CO3	10

(P.T.O.)

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Program : BCA/BSC
Batch : 2023-24
Semester : II
Course : Discrete Mathematics
Course Code : DM-201
Day : Tuesday
Date : 19th March 2024

(SET-B)

Maximum marks: 30 marks

Time: 1 hr.

Instructions:

- All the sections are compulsory
- Assume missing data suitably, if any

SECTION-A			
All questions are compulsory, each question carries 2 marks			
Question	BTL	CO	Marks
1. What is the degree sequence of a graph	CO1	L1	2
2. Define a simple graph	CO1	L1	2
3. What is null graph and trivial graph	CO1	L1	2
4. What is proposition	CO2	L1	2
5. What is contradiction	CO2	L1	2
SECTION-B			
Attempt any two questions from three, each question carries 5 marks			
1. Construct the maximum possible number of graphs with $n = 3$	CO1	L3	5
2. Apply the rule of adjacency and find the adjacent matrix for the following graph	CO1	L3	5
3. Explain different types of connectives and draw the truth tables for each connective	CO2	L2	5
SECTION-C			
Attempt any one question from two, each question carries 10 marks			
1. Explain the terms walk, open and closed walk, trail and path, circuit and cycle with appropriate examples	CO1	L2	10
2. Construct the truth table for $(P \leftrightarrow Q) \leftrightarrow (R \leftrightarrow S)$	CO2	L3	10



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Program : BSC(CS)
Semester : II
Course Code : BSC201
Maximum Marks: 30 marks

Batch: 2023-24
Course: Programming with Advanced C
Day: Wednesday
Date: 20th March, 2024 Time: 1 hr.

Instructions:

- 1) Use of any digital device is not allowed. 2) Draw neat Diagrams where necessary.
3) Write answers of all questions in section at one place.

SECTION A (10 marks)**(All questions are compulsory) (Each question carries 2 Marks)**

Question	BTL	CO	Marks
Q.1) What is Pointer? Explain with Example.	L2	CO-3	2
Q.2) Define Function? State it's advantages and disadvantages.	L1	CO-1	2
Q.3) Justify your output for the following program. <pre>int sum_diff(int a,int b) { int sum=a+b; int diff=a-b; return sum,diff; } main() { int a=20,b=10; printf("Sum is %d & Difference is %d\n",sum_diff(a,b),sum_diff(a,b)); }</pre> <p align="center"><i>sum = 30</i></p>	L3	CO-2	2
Q.4) Justify your output for the following program. <pre>#include<stdio.h> main() { int a[3], b[3]={10,20,30}; printf("Assigning an array to an array:\n"); a=b; printf("Elements of array a are:\n"); printf("%d %d %d",a[0],a[1],a[2]); }</pre> <p align="center"><i>E of A = 12, 20</i></p>	L3	CO-3	2
Q.5) What is Function prototype?	L2	CO-2	2

SECTION B (10 marks)**(Attempt any Two questions from three) (Each question carries 5 marks)**

Q.1) Explain 'function called by reference' with suitable example?	L2	CO-2	5
Q.2) What is function recursion? Explain with program using recursive function 'Fact()', which will calculate the factorial of given number. <i>int (*fact);</i>	L2	CO-2	5
Q.3) What is Array? Explain different the terms with suitable program i) Array declaration ii) Initialization iii) assigning values to array elements iv) traverse the array operations	L2	CO-3	5

(P.T.O.)

SECTION C (10 marks)

(Attempt any One question from two) (Each question carries 10 marks)

Q.1) What are the features of array? Write a C program to accept and store salaries of 100 employees and display

- i) number of employees having salary less than Rs. 10000/-
- ii) number of employees greater than Rs. 10000/-
- iii) Total salary of all employees.
- iv) Average salary.

L2

CO-3

10

Q.2) Illustrate storage classes in C with suitable examples of each?

L2

CO-1

10

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Program : BCA/ BSC-CS (SET-B)
 Batch : 2023-24
 Semester : II
 Course : Introduction to Cloud Computing
 Course Code : BCA213/ BSC203
 Day : Monday
 Date : 18th March 2024

Maximum marks: 30 marks
 Time: 1 hr.

Instructions:

- All the sections are compulsory
- Assume missing data suitably, if any

SECTION-A

All questions are compulsory, each question carries 2 marks

Question	BTL	CO	Marks
1. What is the meaning of resource sharing?	CO1	L1	2
2. State the significance of cloud computing.	CO2	L1	2
3. Define Elasticity in cloud.	CO1	L1	2
4. What is a meaning of vendor? Mention cloud service provider names.	CO2	L1	2
5. Write names of cloud deployment models.	CO3	L1	2

SECTION-B

Attempt any two questions from three, each question carries 5 marks

1. Construct the layered architecture of cloud and discuss.	CO2	L3	5
2. Define front end and backend in cloud computing. How they are connected?	CO1	L3	5
3. Define various types of Applications of Cloud. Write real time applications of it.	CO2	L2	5

SECTION-C

Attempt any one question from two, each question carries 10 marks

1. What is a cloud deployment model? Mention types and explain.	CO2	L2	10
2. Define various types of Cloud computing depends on services. Mention applications of each.	CO3	L2	10



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SCHOOL OF SCIENCE (DEPT. OF BSC(CS))
UNIT-TEST-I

Program : BSC (CS) Batch :2023-24
 Semester : 2nd Course: Database Management System
 Course Code : BSC202 Day & Date: -Tuesday,27th Feb. 2024
 Maximum Marks: 20 marks Time: 1hr.

Instructions: 1) Use of any digital device is not allowed.
 2) Draw neat Diagrams where necessary.

Attempt any 4 each question. Each question carries 5 Marks.			
Question	BTL	CO	Marks
Q.1) Explain the various types of Data Models. <i>Network model</i>	L2	CO1	5
Q.2) What are the various components of SQL.	L1	CO1	5
Q3) Compare the Two-Tier architecture and three tier architecture of DBMS.	L	CO1	5
Q4) Define the following terms: - a) DBMS. b) Attributes and its Types.	L1	CO1	5
Q5) A company has several department. Each <u>department</u> has a number of <u>projects</u> , each of which has a <u>unique name</u> , a <u>unique number</u> , and a <u>single location</u> . Each department has a particular <u>employee</u> who manages the department. An <u>employee</u> is assigned to one <u>department</u> , but may work on <u>several projects</u> , which are not necessarily controlled by the same <u>department</u> . We keep track of the <u>current number</u> of hours per week that an employee works on each project. Each employee is assigned a <u>project</u> , the <u>project</u> is supervised by the supervisor headed by the <u>manager</u> . Identify the Entities and Attributes for the above case. List out the Entities and attributes for the above case.	L2	CO1	5