(Pages : 3) **T – 2049**

Reg. No. : .....

Name : .....

Sixth Semester B.C.A. Degree Examination, April 2024

Career Related First Degree Programme under CBCSS

Group 2(b) — Computer Applications

Core Course

CP 1642 — SOFTWARE TESTING

(2021 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

(Very Short Answer Type)

One word to maximum of **one** sentence. Answer **all** questions.

1. ———— leads to deviation from the expected results.

2. SDLC stands for ————

3. The primary goal of ———— testing is to ensure that the entire software system meets specified requirements.

4. TQM stands for ————

5. Give any two verification methods in software development.

6. ————, testing involves deliberately providing invalid, unexpected, or erroneous inputs to evaluate how well the software can handle unexpected conditions.

P.T.O.

7. ———— automated testing tool is used to test applications, measuring system behavior, and performance under load.

8. White box testing is classified as ———— testing and ———— testing.

9. ———— coverage refers to writing test cases that execute each of the program statements.

10. Equivalence partitioning comes in ———— testing.

(10 × 1 = 10 Marks)

SECTION – B

(Short Answer)

Not to exceed **one** paragraph, answer any **eight** questions. Each question carries **2** marks.

11. What is unit testing?

12. What is code review?

13. What is usability testing?

14. What do you mean by quality assurance?

15. What is six sigma?

16. Define debugging.

17. Differentiate structural testing and static testing.

18. Mention the four types of coverages in code coverage testing.

19. What are the columns in an equivalence partition table?

20. Mention any two situations where state based testing is useful.

21. What do you mean by test management?

22. What is a test plan?

(8 × 2 = 16 Marks)

SECTION – C

(Short Essay)

Not to exceed **120** words, answer any **six** questions. Each question carries **4** marks.

23. Explain the purpose of software testing.

24. Explain top-down testing technique with its advantages and disadvantages.

25. Explain the advantages and disadvantages of black box testing.

26. Write notes on regression testing.

27. Explain the general characteristics of software testing.

28. Write notes on boundary value analysis.

29. Explain user documentation testing.

30. Explain the tasks to be covered in test automation.

31. Describe condition coverage in white box testing.

(6 × 4 = 24 Marks)

SECTION – D

(Long Essay)

Answer any **two** questions. Each question carries **15** marks.

32. Explain various approaches to software testing.

33. Discuss several methods to achieve static testing by humans.

34. Explain decision table based black box testing.

35. Describe the steps in a test process.

(2 × 15 = 30 Marks)

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Reg. No. : .....

Name : .....

Sixth Semester B.Sc./B.C.A. Degree Examination, April 2024

Career Related First Degree Programme under CBCSS

Group2(b)-Computer Applications/Computer Science

Elective Course

CP 1661.2/CS 1661.3 – DIGITAL MARKETING

(2021 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

[Very Short Answer type]

One word to maximum of one sentences, Answer **all** questions

1. How many types of pillars do we have in digital marketing?
2. Define Micro-blogging.
3. What is Google Authorship?
4. What are Search Engines?
5. What is the full form of LBS in mobile marketing?
6. Define spam.
7. Explain PPC or Pay Per Click advertising.
8. Explain keywords.

P.T.O.

9. Expand SERP?

10. Define a webserver.

(10 × 1 = 10 Marks)

SECTION – B

[Short answer]

Not to exceed one paragraph, answer any **eight** questions. **Each** question carries **2** marks.

11. What is digital marketing?

12. Name some Google AdWords ad extensions.

13. What qualities should an effective PPC contain?

14. What is the difference between branding and direct marketing?

15. Write the four forms of e-banking.

16. What is Email marketing?

17. What are the main pillars of affiliate marketing?

18. Write short notes on PPC, SEO, Digital marketing.

19. What is the role of SEO (Search Engine Optimization) in digital marketing?

20. What is Content Marketing?

21. Define a responsive web design.

22. What are the methods of SEO?

(8 × 2 = 16 Marks)

SECTION – C

[Short essay]

Not to exceed **120** words, answer any **six** questions. **Each** question carries **4** marks.

23. What Types of content make up an effective digital marketing campaign?
24. What are the types of fire wall explain?
25. Differentiate between traditional marketing and digital marketing.
26. What are on-page SEO and off-page SEO?
27. List the benefits of Digital Marketing.
28. Difference between Inbound and Outbound Marketing.
29. What are the main elements of the e-mail? Discuss.
30. What is the impact of social media on marketing?
31. What are different kinds of Mobile Marketing?

(6 × 4 = 24 Marks)

SECTION – D

[Long Essay]

Answer any **two** questions. **Each** question carries **15** marks.

32. Explain the categories of digital marketing platforms.
33. What are the major components of online marketing to make it successful? Discuss.
34. How companies can use Blogs and Newsletters as effective digital marketing tool? Support your answer with suitable example.
35. What is Social Media Optimisation, what are the methods by which it is processed. Explain the types in detail.

(2 × 15 = 30 Marks)

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Name : .....

Sixth Semester B.C.A. Degree Examination, April 2024

Career Related First Degree Programme under CBCSS

Group 2(b)-Computer Applications

Core Course

CP 1644 : INFORMATION SECURITY

(2021 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

[Very Short Answer type]

One word to maximum of one sentence. Answer **all** questions

1. Techniques for decrypting message without knowing encryption details is called _____ .

2. What is stream cipher?

3. Expand DES.

4. Expand DSA.

5. What is TLS?

6. What is S/MIME?

7. What is IPv6?

8. What is bastion host?

9. Expand VPN.

10. In which year IT act was implemented in India?

(10 × 1 = 10 Marks)

SECTION – B

[Short answer]

Not to exceed **one** paragraph, answer any **eight** questions. **Each** question carries **2** marks.

11. Define computer security.

12. Explain computer security attack.

13. Differentiate encryption and decryption.

14. Explain digital signature.

15. Explain DSS.

16. Differentiate HTTP and HTTPS.

17. Explain local forwarding and remote forwarding in SSH.

18. Explain Pretty Good Privacy.

19. Mention any two IPsec components.

20. Explain the need of padding field in ESP.

21. What is the function of IKE?

22. Explain any two classifications of virus by target.

(8 × 2 = 16 Marks)

SECTION – C

[Short essay]

Not to exceed **120** words, answer any **six** questions. **Each** question carries **4** marks.

23. Explain computer security requirements triad.
24. Explain authentication protocols.
25. Discuss brute force attack.
26. Differentiate master key and session key in cryptographic systems.
27. Explain Secure Hash algorithm.
28. Mention any four requirements of digital signature.
29. Explain connection and session concepts in SSL.
30. Discuss the components in Internet mail architecture.
31. Compare Intrusion Detection System and Intrusion Prevention System.

(6 × 4 = 24 Marks)

SECTION – D

[Long Essay]

Answer any **two** questions. **Each** question carries **15** marks.

32. Explain Data Encryption Standard Algorithm.
33. Explain encryption and decryption using public key certificate.
34. Discuss about SSH protocol stack.
35. Explain the working of behaviour blocking antivirus software.

(2 × 15 = 30 Marks)

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Reg. No. : .....

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Sixth Semester B.C.A. Degree Examination, April 2024

Career Related First Degree Programme under CBCSS

Group2(b)–Computer Applications

Core Course

CP 1643 – OBJECT ORIENTED ANALYSIS AND DESIGN

(2021 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

[Very Short Answer Type]

Answer **all** questions. **Each** question carries **1** mark.

1. Define the term "class" in the context of object-oriented programming.

2. Compare algorithmic decomposition with object-oriented decomposition.

3. Briefly explain the Object-Oriented System Development Life Cycle.

4. What is the significance of use cases in Object-Oriented Methodologies?

5. Explain the concepts of UML (Unified Modeling Language) and its role in Object.

6. Define UML class diagrams and elaborate on how they represent various features of a class.

7. Differentiate between messages and types of associations in UML.

P.T.O.

8. Describe the key elements of an object diagram in UML.

9. Identify and explain the elements of a use case diagram in UML.

10. Discuss the uses and extends associations in the context of use case diagrams.

(10 × 1 = 10 Marks)

SECTION – B

[Short Answer]

Answer any **eight** questions. **Each** question carries **2** marks.

11. Elaborate on the benefits of using sequence diagrams in UML dynamic modeling.

12. Define collaboration diagrams in UML and explain their key elements.

13. Provide examples of Activity diagrams in UML and explain their elements.

14. Discuss the significance of State Chart diagrams in UML

15. Explain the concept of UML Implementation diagrams with a focus on Component diagrams.

16. Provide examples of elements in a Deployment diagram in UML.

17. Explain the UML class model and its role in Object-Oriented Analysis and Design.

18. Discuss the Classification theory in Object-Oriented Analysis.

19. Explore approaches for identifying classes in Object-Oriented Analysis.

20. Walk through the Object-Oriented Design process and its key stages.

21. Explain the design axioms and corollaries in Object-Oriented Design with the help of an example UML class diagram.

22. Discuss the concepts and applications of static models in UML.

(8 × 2 = 16 Marks)

SECTION – C

[Short Essay]

Answer any **six** questions. **Each** question carries **4** marks.

23. Explain how UML class diagrams represent various features of a class with the help of examples.

24. Analyze the types of associations in UML and their significance in object-oriented modeling.

25. Explore the elements of an object diagram in UML and their role in visualizing relationships.

26. Identify and explain the elements of a use case diagram, emphasizing their importance in system analysis.

27. Provide a detailed explanation of UML interaction diagrams with a focus on Sequence Diagrams.

28. Discuss the benefits of using collaboration diagrams in UML dynamic modeling.

29. Elaborate on the elements and applications of Activity diagrams in UML.

30. Explain the key features of State Chart diagrams in UML and provide relevant examples.

31. Perform a comprehensive analysis of Component diagrams in UML, providing examples and applications.

(6 × 4 = 24 Marks)

SECTION – D

[Long Essay]

(Answer any **two** questions. **Each** question carries **15** marks)

32. Explore the elements and applications of Deployment diagrams in UML, emphasizing their role in system architecture.

33. Discuss the UML meta model and its significance in the context of Object-Oriented Analysis and Design.

34. Apply Classification theory to identify classes in a real-world scenario, illustrating the process.

35. Walk through the Object-Oriented Design process with a detailed example UML class diagram, explaining each step thoroughly.

(2 × 15 = 30 Marks)

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Reg. No. : .....

Name : .....

Sixth Semester B.C.A. Degree Examination, April 2024

Career Related First Degree Programme under CBCSS

Group 2(b) — Computer Applications

Core Course

CP 1641 — ARTIFICIAL INTELLIGENCE

(2021 Admission)

Time : 3 Hours Max. Marks : 80

SECTION – A

(Very Short Answer Type)

Answer **all** questions. Each question carries **1** mark.

1. What is the significance of Artificial Intelligence (AI)?
2. Define Knowledge and discuss its importance in AI.
3. Briefly explain the concept of Knowledge-Based Systems.
4. Describe the representation of knowledge in AI.
5. What are the fundamental aspects of knowledge organization in AI?
6. Discuss the process of knowledge manipulation in AI.
7. Explain the acquisition of knowledge in the context of AI.

8. Define formalized symbolic logics and its relevance in AI.

9. Provide an overview of the syntax and semantics of propositional Logic.

10. Explain the properties of Well-Formed Formulas (WFFs) in symbolic logics.

(10 × 1 = 10 Marks)

SECTION – B

(Short Answer)

Answer any **eight** questions. Each question carries **2** marks.

11. Discuss the importance of AI in the current technological landscape.

12. Describe the knowledge organization techniques in Knowledge-Based Systems.

13. Explain how knowledge is represented in AI, focusing on different methods.

14. Discuss the role of formalized symbolic logics in AI reasoning.

15. Explain the conversion process of Propositional Logic to Clausal Form.

16. Describe the Resolution principle in the context of symbolic logics.

17. Discuss the concept of associative networks in structured knowledge.

18. Explain the frame structures used in representing knowledge.

19. Define Conceptual Dependencies and their role in AI.

20. Provide examples of search problems and discuss preliminary search concepts.

21. Differentiate between uninformed (blind) and informed search strategies.

22. Explain the searching of And-Or graphs in AI.

(8 × 2 = 16 Marks)

SECTION – C

(Short Essay)

Answer any **six** questions. Each question carries **4** marks.

23. Discuss the measures used for matching in AI.
24. Explain the Partial Matching technique and its applications.
25. Describe the RETE Matching Algorithm in detail.
26. Provide an overview of Natural Language Processing (NLP).
27. Explain the bask parsing techniques in NLP.
28. Discuss the role of semantic analysis in NLP.
29. Describe the structures used for representing languages in NLP.
30. Explain the process of natural language generation in AI.
31. Discuss the components and functions of natural language systems.

(6 × 4 = 24 Marks)

SECTION – D

(Long Essay)

Answer any **two** questions. Each question carries **15** marks.

32. Analyze the challenges and benefits of implementing AI in various industries.
33. Discuss the role of knowledge-based systems in decision-making processes.
34. Evaluate the impact of formalized symbolic logics on AI reasoning.
35. Illustrate the resolution process using examples from Propositional Logic.

(2 × 15 = 30 Marks)
