BCA

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Reg. No. : .....

Name : .....

Sixth Semester B.C.A. Degree Examination, April 2025

Career Related First Degree Programme under CBCSS

Group 2(b) – Computer Applications

Core Course

CP 1641 : ARTIFICIAL INTELLIGENCE

(2021 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very short answer type)

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

1. Define AI.
2. Explain knowledge.
3. What is FOPL?
4. What is script?
5. What is meant by linguistics?
6. Define And-Or graph.
7. What is WWF?
8. _____ is the process of analyzing a string of symbols according to the rules of a formal grammar.

P.T.O.

9. What is informed search?

10. What is natural language system?

(10 × 1 = 10 Marks)

SECTION – B (Short Answer)

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

11. Mention any four domains in which AI plays important role.

12. List any two properties of Well-Formed Formulas.

13. Explain inference rule.

14. Explain clausal form.

15. Explain frame structure.

16. Explain Grammers in NLP.

17. What is Natural Language Processing?

18. Explain semantic analysis.

19. What are representation structures in Natural Language Processing?

20. Explain propositional logic.

21. Explain inference rules in the context of Artificial Intelligence.

22. Discuss partial matching in AI.

(8 × 2 = 16 Marks)

SECTION – C (Short Essay)

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

23. Explain knowledge-based system.

24. Differentiate knowledge acquisition and knowledge manipulation.

25. Explain syntax and semantics in proportional logic.

26. Discuss about associative networks.

27. Explain uniform or blind search.

28. Discuss about RETE matching algorithm.

29. Explain natural language generation process.

30. Discuss on measurers of matching in the context of AI.

31. Explain resolution principle related to AI.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

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

32. Discuss on knowledge representation techniques.

33. Discuss about structured knowledge.

34. Discuss on various matching techniques in AI.

35. Discuss about various parsing techniques.

(2 × 15 = 30 Marks)

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Name : .....

Sixth Semester B.C.A. Degree Examination, April 2025

Career Related First Degree Programme under CBCSS

Core Course

Group 2(b) – COMPUTER APPLICATIONS

CP 1642 – Software Testing

(2021 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very Short Answer Type)

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

1. ———— can be viewed as incorrect results occurred during program execution.

2. ———— testing is often the final phase of testing before the software is considered complete and ready for release.

3. ———— testing is similar to white box testing.

4. CQI stands for ————

5. ———— testing is a type of software testing performed by the internal development team before the software is released to external users.

6. ———— testing, also known as "happy path testing," is a testing technique where the focus is on validating that the system behaves as expected under normal and valid conditions.

7. State based testing is also known as ————————

8. Selenium is an example for ————————

9. Desk checking is an example for ———————— testing.

10. In ———————— coverage testing. we split a program into a number of distinct paths.

(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 integration testing?

12. What is smoke testing?

13. What is beta testing?

14. Mention the limitations of testing.

15. What do you mean by quality control?

16. What is Total Quality Management?

17. What do you mean by requirements based testing?

18. What is the need for black box testing?

19. What is domain testing?

20. What do you mean by a test case?

21. What is meant by test automation?

22. What is risk management in software testing?

(8× 2= 16 Marks)

SECTION – C (Short Essay)

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

23. Explain bottom-up testing technique with its advantages and disadvantages.

24. Explain the advantages and disadvantages of white-box testing.

25. Write notes on load testing.

26. Explain the purpose of static testing.

27. Write notes on graph based testing.

28. Explain compatibility testing.

29. Mention various steps involved in test planning.

30. Explain the design and architecture for test automation.

31. Write notes on automation testing tools.

(6 × 4 = 24 Marks)

SECTION – D (Long Essay)

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

32. Explain bugs, faults and failures in detail.

33. Explain statement coverage and path coverage in code coverage testing.

34. Explain equivalence partitioning with example.

35. Explain different activities involved in test management.

(2 × 15 = 30 Marks)

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Sixth Semester B.C.A./B.Sc. Degree Examination, April 2025

Career Related First Degree Programme under CBCSS

Group 2(b) – Computer Applications/Computer Science

Elective Course

CP 1661.2/CS 1661.3 : DIGITAL MARKETING

(2021 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

[Very short answer type]

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

1. What is full form of GIAS?
2. What are the benefits for E-Banking?
3. Who is an intruder?
4. What is full form of DoS?
5. Which formula is used by Pay-Per-Click?
6. What is spoofing?
7. Write one benefit of using paid search marketing?

P.T.O.

8. Write one benefit of a hash tag?

9. What is the full form of SET?

10. What is Online Advertising?

(10 × 1 = 10 Marks)

SECTION – B

[Short answer]

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

11. Explain any two social media analytical tools.

12. Write the working of Hash Tag.

13. What are some techniques of Black Hat SEO?

14. What is the difference between SEO and SEM?

15. List three search engines and compare its usage.

16. Name some Off-Page SEO factors

17. What are the four P's in marketing?

18. What is online advertising?

19. What is B2C digital marketing?

20. State few channels of digital marketing.

21. What is white hat SEO?

22. What is E-Tailing?

(8 × 2 = 16 Marks)

SECTION – C

[Short essay]

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

23. Write the importance of e-mail marketing in the era of social media.
24. Write a short note on Intruders with three classes.
25. Name the various kinds of product linking in Google Analytics?
26. What are the four C's of Digital Marketing?
27. Differentiate between Double Click and Google Adword.
28. Differentiate between AdSense and AdWords.
29. What is the advanced factor of On-Page SEO?
30. Explain some techniques of Black Hat SEO?
31. What is needed for an effective PPC campaigning?

(6 × 4 = 24 Marks)

SECTION – D

[Long essay]

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

32. Write a short note about firewall? Explain types of firewall in detail.
33. Define digital marketing and explain Challenges in Digital Marketing.
34. Explain the different types of digital marketing.
35. Discuss in detail about Search Engine Marketing.

(2 × 15 = 30 Marks)

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Sixth Semester B.C.A. Degree Examination, April 2025

Career Related First Degree Programme under CBCSS

Group 2(b) – Computer Applications

Core Course

CP 1643 : OBJECT ORIENTED ANALYSIS AND DESIGN

(2021 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A (Very Short Answer Type)

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

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

2. Explain the process of defining a class in object-oriented programming.

3. Compare algorithmic decomposition with object-oriented decomposition.

4. Briefly describe the Object-Oriented System Development Life Cycle.

5. What is the significance of use-case driven development in Object-Oriented Methodologies?

6. Explain the Unified Approach in Object-Oriented Methodologies.

7. Define UML and its role in Object-Oriented Analysis and Design.

8. Differentiate between a UML class diagram and a use case diagram.

9. Describe the elements of a UML interaction diagram.

10. Explain the benefits of using sequence diagrams in UML dynamic modeling.

(10 × 1 = 10 Marks)

SECTION – B (Short Answer)

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

11. Discuss the role of UML diagrams in representing various features of a class.

12. Explain the concept of messages in UML diagrams and types of associations.

13. Provide an overview of object diagrams in UML including their purpose.

14. Identify the elements of a use case diagram arid explain their significance.

15. Differentiate between "uses" and "extends" associations in use case diagrams.

16. Describe the elements and benefits of collaboration diagrams in UML.

17. Discuss the key components and elements of an activity diagram in UML.

18. Explain the concept of a state chart diagram in UML with examples.

19. Detail the elements of UML implementation diagrams, focusing on component diagrams.

20. Provide examples and describe the elements of a deployment diagram in UML.

21. Explain the UML meta model and its importance in Object-Oriented Analysis and Design.

22. Discuss the Classification theory in Object-Oriented Analysis, emphasizing its role.

(8 × 2 = 16 Marks)

SECTION – C (Short Essay])

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

23. Elaborate on the approaches for identifying classes in Object-Oriented Analysis.

24. Discuss the Object-Oriented Design process and its key phases.

25. Provide an example UML class diagram, illustrating the design process.

26. Analyze the significance of UML dynamic modeling in the development life cycle.

27. Discuss the role of sequence diagrams in capturing dynamic aspects of a system.

28. Provide examples and explain the benefits of state chart diagrams in UML.

29. Describe the elements and applications of UML implementation diagrams.

30. Explain the elements and applications of deployment diagrams in UML.

31. Discuss the UML meta model and its impact on system development.

(6 × 4 = 24 Marks)

SECTION – D (Short Essay)

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

32. Perform an in-depth analysis of the Object-Oriented System Development Life Cycle, emphasizing the role of use-case driven development.

33. Critically examine the Unified Approach in Object-Oriented Methodologies, highlighting its strengths and weaknesses.

34. Create a detailed UML class diagram for a hypothetical system, incorporating relevant features and associations.

35. Conduct a comprehensive Object-Oriented Analysis and Design process for a given scenario. providing UML diagrams and justifications for design decisions.

(2 × 15 = 30 Marks)

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Sixth Semester B.C.A. Degree Examination, April 2025

Career Related First Degree Programme under CBCSS

Group 2(b) — Computer Applications

Core Course

CP 1644 : INFORMATION SECURITY

(2021 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

(Very Short Answer Type)

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

1. The study of encryption is known as ————————

2. What is steganography?

3. Mention any one substitution technique encryption.

4. DSS stands for ————————.

5. Expand SSL.

6. Mention any one block cipher algorithm.

7. What is SMTP?

8. Name any one E-mail service provider.

9. What is a computer virus?

10. What is Denial of Service (DoS) virus attack?

(10 × 1 = 10 Marks)

SECTION – B

(Short Answer)

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

11. Explain computer security threat.

12. Differentiate active and passive computer security attacks.

13. What is cryptology?

14. What is direct digital signature?

15. Discuss any two properties of digital signatures.

16. Explain PKI.

17. Explain HTTPS.

18. What is the function of secure shell (SSH)?

19. What is session identifier?

20. Explain PGP.

21. Explain any two applications of IPsec.

22. Explain any two types of intruders to computer system.

(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 three key objectives of computer security.

24. Discuss RSA working.

25. Explain the function of data integrity algorithms.

26. Explain generic digital signature process.

27. Explain public announcement of public key method.

28. Discuss three types of session keys.

29. Discuss about MAC.

30. Compare transport mode and tunnel mode in IPsec.

31. Explain classification of virus based on concealment strategy.

(6 × 4 = 24 Marks)

SECTION – D

(Long Essay)

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

32. Discuss symmetric encryption and decryption process.

33. Describe about various techniques of public key distribution.

34. Discuss about SSL protocol stack.

35. Explain different types of malicious software.

(2 × 15 = 30 Marks)