

Total No. of Questions : 09

Total No. of Pages : 02

B.Tech. (IT) (Sem.-5)

SOFTWARE ENGINEERING

Subject Code : BTIT-504-18

M.Code : 78259

Date of Examination : 18-06-2024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- (a) Write at least two advantages of waterfall model.
- (b) What do you mean by Non-functional Requirements?
- (c) Define the terms modularity and layering.
- (d) What do you mean by coding standards in software engineering?
- (e) Explain in brief about mutation testing.
- (f) List various software reliability metrics.
- (g) Explain the purpose of Gantt charts.
- (h) What is the need of Software Project Management?
- (i) Write advantages of Software reuse.
- (j) What is SEI CMMI in Software Engineering?



SECTION-B

2. Write a detailed note on Feasibility study.
3. Explain in detail about DFD.
4. Write a detailed note on black box testing.
5. Write a detailed note on project scheduling using PERT.
6. Explain in brief about Software maintenance.

SECTION-C

7. Write a detailed note on Evolutionary Model.
8. Write a detailed note on Static and Dynamic Analysis.
9. Write a detailed note on Component based Software Development.

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B.Tech. (Information Technology) (Sem-5)
DATABASE MANAGEMENT SYSTEMS

Subject Code : BTIT502-18

M.Code : 78257

Date of Examination : 26-06-2024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a. How do object-oriented databases differ from object-relational databases in their data modeling approach?
- b. How does the ER model differ from the relational model in terms of representing data relationships?
- c. How does a web database differ from traditional databases in terms of accessibility and architecture?
- d. What's the core principle behind ACID properties in database transactions?
- e. What's the key difference between DDL and DML in database management?
- f. How do storage strategies differ between row-based and column-based storage in databases?
- g. What's a primary objective of data abstraction in database design?
- h. Explain how hashing in databases helps in achieving efficient data retrieval?
- i. What are the main risks associated with SQL injection attacks, and how can they be mitigated?
- j. What is intrusion detection?



SECTION-B

2. How does the logical database model help in representing complex relationships between data entities?
3. Explain the significance of integrity constraints in maintaining data consistency.
4. What are the challenges associated with implementing multi-version concurrency control schemes in distributed databases?
5. What are the key factors influencing the choice of join strategies in query execution?
6. Discuss the advantages and disadvantages of Discretionary Access Control (DAC) compared to Mandatory Access Control (MAC) in database security.

SECTION-C

7. Compare and contrast object-oriented databases and object-relational databases, covering their data modeling capabilities, query languages, and suitability for different application scenarios.
8. Describe the key principles and components of the Entity-Relationship (ER) model, and how it facilitates database design?
9. Describe the structure and functionality of B-Trees in detail, including how they are used for indexing in databases and their advantages over other data structures?

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B.Tech. (IT) (Sem.-5)

CYBER LAWS AND IPR

Subject Code : BTIT509-18

M.Code : 78263

Date of Examination : 24-06-2024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. Write briefly :

- a) What is data diddling?
- b) What do you mean by email bombing?
- c) Why cyber crimes take place?
- d) What is incident response?
- e) How many acts are there in IT Act 2000?
- f) What is the role of Certifying Authority?
- g) What is copyright law?
- h) What are digital signatures?
- i) What is indirect infringement of copyright?
- j) What is the doctrine of fair use in India?



SECTION-B

2. What do you mean by DDoS attacks? Give example.
3. Discuss new ways to fight cyber crime.
4. Discuss objectives of the Information Technology Act 2000.
5. How Intellectual Property (IP) Relates to E-Commerce?
6. What is the role of law enforcement agencies?

SECTION-C

7. Explain the types of cyber crimes in detail.
8. What do you mean by ownership of copyright? Discuss the rights of copyright owner.
9. Describe the different data breaching offences. Also, mentions the punishments for the same.

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Subject Code : HSMC122-18

M.Code : 78260

Date of Examination : 20-06-2024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

- 1. Write briefly :**

(10 × 2 = 20)

- i) What is Gratitude?

कृतज्ञता क्या है?

ਕ੍ਰਿਤਗਿਅਤਾ ਕੀ ਹੈ?

- ii) Explain Natural Acceptance.

सहज स्वीकृति समझाओ ।

ਕੁਦਰਤੀ ਮੰਜੁਰੀ ਸਮਝਾਓ।

- iii) How the value “care” is related with body?

मूल्य “ध्यान” शरीर के साथ कैसे संबंधित है।

ਮੁੱਲ ਧਿਆਨ ਸਰੀਰ ਦੇ ਨਾਲ ਕਿਵੇਂ ਸਬੰਧਤ ਹੈ?

- iv) What are the different patterns of differentiation?

भेदभाव के विभिन्न पैटर्न क्या हैं?

ਫਰਕ ਦੇ ਵੱਖ ਵੱਖ ਪੈਟਰਨ ਕੀ ਹਨ?

- v) What is difference between prosperity and wealth?

समृद्धि और धन के बीच क्या अंतर है?

ਖੁਸ਼ਹਾਲੀ ਅਤੇ ਅਮੀਰੀ ਦੇ ਵਿੱਚ ਕੀ ਅੰਤਰ ਹੈ?



vi) What is Innateness?

स्वाभाविकता क्या है?

संवादात्मिकता की है?

vii) What do you mean by values or human values?

मूल्यों या मानवीय मूल्यों से आप क्या समझते हैं?

कदरों-कीमतों जਾਂ मनुषी कदरों-कीमतों तों तुहाडा की भाव है?

viii) What is Utility-Value?

उपयोगिता-मूल्य क्या हैं?

उपयोगिता-मूल की है?

ix) What is cyclic production?

चक्रीय उत्पादन क्या है?

चकरी उत्पाद की है?

x) What is Existence?

अस्तित्व क्या हैं?

असत्ता की है?

SECTION-B

(5 × 4 = 20)

2. What do you mean by values? How do they differ from skills? How values and skills are complementary?

मूल्यों से आप क्या समझते हैं? वे कौशल से किस प्रकार भिन्न हैं? मूल्य और कौशल एक-दूसरे के पूरक कैसे हैं?

मूलों तों तुहाडा की मललब है? उह हुनरा तों किवें वंखरे हन? मूल अते हुनर किवें पूरक हन?

3. What is the difference between belief and understanding?

विश्वास और समझ में क्या अंतर है?

विश्वास अते समझ विंच की अंतर है?

4. What is the need for value education in technical and other professional Institutions?

तकनीकी एवं अन्य व्यावसायिक संस्थानों में मूल्यपरक शिक्षा की क्या आवश्यकता है?

उकनीकी अते होर पेमेवर संस्थावां विंच मूल की सिंधिआ की लोड है?



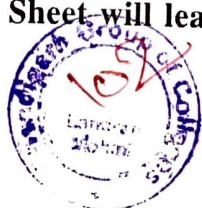
5. What are the basic guidelines of value education?
 ਮੂਲ ਸਿੱਖਿਆ ਦੀ ਬੁਨਿਆਦੀ ਦਿਸ਼ਾਨਿਰ್ದੇਸ਼ ਕੀ ਹਨ?
 ਮੁੱਲ ਸਿੱਖਿਆ ਦੇ ਬੁਨਿਆਦੀ ਦਿਸ਼ਾ ਨਿਰਦੇਸ਼ ਕੀ ਹਨ?
6. Do you feel that you have some pre-conditioning? How do you evaluate them?
 ਕੀ ਤੁਸੀਂ ਮਹਿਸੂਸ ਕਰਦੇ ਹੋ ਕਿ ਤੁਹਾਡੇ ਕੋਲ ਕੁਝ ਪੂਰਵ ਮਾਨਤਾਵਾਂ ਹਨ? ਤੁਸੀਂ ਉਹਨਾਂ ਦਾ ਮੁਲਾਂਕਣ ਕਿਵੇਂ ਕਰਦੇ ਹੋ?

SECTION-C

(2 × 10 = 20)

7. "When we are assured of the intention of the other and find that the competence is lacking. We will come to help the other. When we doubt the intention of the other, we get into opposition", explain.
 "ਜਦੋਂ ਅਸੀਂ ਦੂਜੇ ਦੀ ਇਰਾਦੇ ਦੀ ਪੁਸ਼ਟੀ ਕਰਦੇ ਹਾਂ ਅਤੇ ਪਤਾ ਲੱਗਦਾ ਹੈ ਕਿ ਯੋਗਤਾ ਦੀ ਕਮੀ ਹੈ। ਅਸੀਂ ਦੂਜੇ ਦੀ ਮਦਦ ਕਰਨ ਲਈ ਆਵਾਂਗੇ। ਜਦੋਂ ਅਸੀਂ ਦੂਜੇ ਦੀ ਨੀਅਤ 'ਤੇ ਸ਼ੱਕ ਕਰਦੇ ਹਾਂ, ਤਾਂ ਅਸੀਂ ਵਿਰੋਧ ਵਿੱਚ ਪੈ ਜਾਂਦੇ ਹਾਂ", ਵਿਆਖਿਆ ਕਰੋ।
8. How do realization and understanding lead to the definiteness of human conduct?
 ਜਾਣਨਾ ਅਤੇ ਸਮਝਣਾ ਮਨੁੱਖੀ ਆਚਰਣ ਦੀ ਨਿਸ਼ਚਿਤਤਾ ਵੱਲ ਕਿਵੇਂ ਅਗਵਾਈ ਕਰਦੀ ਹੈ?
9. The pleasures that we derive from sensations are short-lived, and the efforts to extend them lead to misery/ Examine and illustrate the statement with an example.
 ਸੰਵੇਦਨਾਵਾਂ ਤੋਂ ਪ੍ਰਾਪਤ ਖੇਡਾਂ ਸੰਖੇਪ ਹੁੰਦੀਆਂ ਹਨ ਅਤੇ ਉਨ੍ਹਾਂ ਨੂੰ ਵਧਾਉਣ ਦੇ ਯਤਨ ਦੁਖੀ ਹੁੰਦੇ ਹਨ। ਇੱਕ ਉਦਾਹਰਣ ਦੇ ਨਾਲ ਬਿਆਨ ਦੀ ਜਾਂਚ ਕਰੋ ਅਤੇ ਵਿਆਖਿਆ ਕਰੋ।

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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech. (IT) (Sem.-5)
PROGRAMMING IN JAVA

Subject Code : BTIT503/18

M.Code : 78258

Date of Examination : 14-06-2024

Max. Marks : 60

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Write briefly :

- a) What is JVM and what is its role in Java?
- b) What is the purpose of the import statement?
- c) What operator is used for concatenation in Java?
- d) What is typecasting in Java?
- e) Define TCP/IP.
- f) What is inheritance in Java?
- g) What is a package in Java?
- h) How do you handle an exception using try-catch blocks?
- i) How does the wait () method work?
- j) What does the super keyword do?



SECTION-B

2. Discuss the implications of using wrapper classes for primitive types in terms of performance and object management.
3. Explain the differences and uses of single-dimensional and multi-dimensional arrays in Java, including memory layout.
4. Discuss the principles of object-oriented programming as they pertain to classes in Java, including encapsulation, inheritance, and polymorphism.
5. Explain the concept of constructor overloading in Java and its benefits with practical examples.
6. Discuss Applet Tag. How we can pass parameters to HTML using Applet?

SECTION-C

7. Provide an in-depth analysis of the final keyword and its impact on inheritance, including final classes and methods.
8. Analyze the differences between implementing Runnable and extending Thread and provide guidelines on when to use each approach?
9. Explain the life cycle of a Thread with the help of an example.

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Total No. of Questions : 09

B.Tech. (I.T) (Sem.-5)

Subject Code : BTIT501/18

M.Code : 78256

Date of Examination : 12-06-2024

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A** is **COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

1. Write briefly :

- a. What do you mean by Grammar?
- b. Explain any two characteristics of Finite Automata.
- c. List the Components of Regular Expressions.
- d. How different the NFA and DFA?
- e. What is Equivalence with Finite Automata?
- f. What is Ambiguity in CFG?
- g. What is Context Sensitive Grammar?
- h. What is Turing Machine?
- i. What do you mean by Number problem?
- j. Describe the Cook-Levin Theorem.



SECTION-B

2. Explain in brief the Context Free Grammers and Languages.
3. What are the various functions of Church-Turing Thesis?
4. Discuss about the Classes NP and co-NP.
5. Explain about Reduction between Languages and Rice's theorem.
6. What are the capabilities of Polynomial time many-one reduction?

SECTION-C

7. Define Regular expression. Explain Non-deterministic Finite Automata (NFA) and equivalence with DFA.
8. What are Context Free Grammers? Explain Non-Deterministic Pushdown Automata (PDA) and equivalence with CFG.
9. What is Tactability? Explain NP completeness of Propositional satisfiability with other variants.

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