A5-R4: STRUCTURED SYSTEM ANALYSIS & DESIGN

अवधि: 03 घंटे
DURATION: 03 Hours

अधिकतम अंक: 100
MAXIMUM MARKS: 100

रोल नं.: |
Roll No.: |

उत्तर-पुस्तिका सं.: |
Answer Sheet No.: |

परीक्षार्थी का नाम: Name of Candidate: ________________

परीक्षार्थी के हस्ताक्षर: Signature of candidate: ________________

परीक्षार्थी के लिए निर्देश: Instructions for Candidate:

कृपया प्रश्न-पुस्तिका, ओएमआर शीट एवं उत्तर-पुस्तिका में दिये गए निर्देशों को ध्यान पूर्वक पढ़ें।

प्रश्न-पुस्तिका की भाषा अंग्रेजी है। परीक्षार्थी केवल अंग्रेजी भाषा में ही उत्तर दें सकते हैं।

इस मॉड्यूल/पेपर के दो भाग है। भाग एक में चार प्रश्न और भाग दो में पाँच प्रश्न हैं।

भाग एक "वैकल्पिक" प्रकार का है जिसके कुल अंक 40 है तथा भाग दो, "व्यक्तिगत" प्रकार है और इसके कुल अंक 60 है।

भाग एक के उत्तर, इस प्रश्न-पत्र के साथ दी गई ओएमआर उत्तर-पुस्तिका पर, उसमें दिये गए अनुदेशों के अनुसार ही दिये जाने चाहिए। भाग दो की उत्तर-पुस्तिका में भाग एक के उत्तर नहीं दिये जाने चाहिए।

भाग एक के लिए अधिकतम समय दोनों एक पंक्ति निर्धारित की गई है। भाग दो की उत्तर-पुस्तिका, भाग एक की उत्तर-पुस्तिका जोड़ते हुए पत्र पर लिखा जाएगा। तथापि, निर्धारित एक घंटे से पहले भाग एक पूरा करने वाले परीक्षार्थी भाग एक की उत्तर-पुस्तिका निरीक्षकों को सूची के तुरंत बाद, भाग दो की उत्तर-पुस्तिका में संक्षिप्त हो जाएगा।

लेखनीय भाषाओं में पत्र पर हस्ताक्षर किए गए विनिमय एवं अपनी उत्तर-पुस्तिका, निरीक्षकों को सूची दी हुई नहीं छोड़ सकते हैं। ऐसा नहीं करने पर, परीक्षार्थी को इस मॉड्यूल/पेपर में अधिकार यौगिक कर दिया जाएगा।

प्रश्न-पुस्तिका को खोलने के निर्देश मिलने के पश्चात एवं उत्तर देने से पहले उभरते हुए यह जाँच कर यह सुनिश्चित कर ले कि प्रश्न-पुस्तिका प्रत्येक रूपी संपूर्ण है।

आवश्यक तौर पर प्रश्न-पुस्तिका और ओएमआर शीट का पत्र की उम्मीद लेने तथा उसका दाब करने के लिए निर्देशन कांप्यूटर स्टेशन से संपूर्ण है।

यदि तुम्हारे पास कोई काफी ही सुझाव हो तो उसे भी जानकारी दें।

DO NOT OPEN THE QUESTION BOOKLET UNTIL YOU ARE TOLD TO DO SO.
PART ONE
(Answer all the questions)

1. Each question below gives a multiple choice of answers. Choose the most appropriate one and enter in the “OMR” answer sheet supplied with the question paper, following instructions therein. (1x10)

1.1 The main objective of feasibility study is:
A) To assess whether it is possible to meet the requirements specifications.
B) To assess if it is possible to meet the requirements specified subject to constraints of budget, human resource and hardware.
C) To assist the management in implementing the desired system.
D) To remove bottlenecks in implementing the desired system.

1.2 Which of the following is a true statement regarding the SDLC phases?
A) The SDLC is not iterative.
B) The life cycle is always a sequentially ordered set of phases.
C) It is not possible to complete some activities in one phase in parallel with those of another phase.
D) The life cycle may be thought of as a circular process in which the end of the useful life of one system leads to the beginning of another project to develop a new version of or replace an existing system.

1.3 Decision tree uses:
A) Pictorial depiction of alternate conditions
B) Nodes and branches
C) Consequences of various depicated alternates
D) All of the above

1.4 This is another name for a working model that demonstrates how part of an information system works.
A) CASE tool
B) Prototype
C) Data flow diagram
D) Decision Tree

1.5 The data base design activity deals with the design of the
A) Logical data base
B) Physical data base
C) Both A) & B)
D) None of the above

1.6 UML used to model the behavior of objects with
A) Use cases
B) Class diagrams
C) Actors diagrams
D) State transition diagrams

1.7 Testing each module alone in an attempt discovering any errors in its code best describes:
A) Module Testing
B) Integration Testing
C) Unit Testing
D) Function Testing

1.8 The coding of data to keep it safe from unauthorized users is called_______.
A) Locking
B) Hiding
C) Masking & Shading
D) Encryption

1.9 Which of the following is important to a successful implementation process for a software project?
A) Commitment to the project
B) Commitment to change
C) Extent of project definition and planning
D) All of the above

1.10 _______ level supply information to strategic tier for the use of top management
A) Operational
B) Environmental
C) Competitive
D) Tactical

2. Each statement below is either TRUE or FALSE. Choose the most appropriate one and enter your choice in the “OMR” answer sheet supplied with the question paper, following instructions therein. (1x10)

2.1 System Analysis can be defined as most recent and perhaps the most comprehensive technique for solving computer problems.

2.2 In the development phase of the SDLC, programmers either create software from scratch or purchase commercially available software.

2.3 The data flow Diagram is the basic component of conceptual system.

2.4 The primary objective of system design is to design the programs, databases and test plan.

2.5 An attribute defines specific tasks that an object can perform.

2.6 Actual programming of software code is done during the development and documentation step in the SDLC.

2.7 Feasibility study is carried out by the users of the proposed system.

2.8 System evaluation is carried out after the system has been operational for a reasonable time.

2.9 The code used for the validation purpose is known as group classification code.

2.10 An entity in an ER diagram is basically the same as an entity in a DFD, the only difference being that in the former it stores data and in the latter it processes data.
3. Match words and phrases in column X with the closest related meaning/word(s)/phrase(s) in column Y. Enter your selection in the “OMR” answer sheet supplied with the question paper, following instructions therein. (1x10)

<table>
<thead>
<tr>
<th>X</th>
<th>Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 In ER modeling, entities are depicted using</td>
<td>A. Data Dictionary</td>
</tr>
<tr>
<td>3.2 A repository of information about a database that documents data elements of a database</td>
<td>B. GUI</td>
</tr>
<tr>
<td>3.3 An important security feature</td>
<td>C. DBMS</td>
</tr>
<tr>
<td>3.4 A diagram which depicts the flow of data in different elements of the system</td>
<td>D. LAN</td>
</tr>
<tr>
<td>3.5 The name for tools that support high-level program development</td>
<td>E. Rectangles</td>
</tr>
<tr>
<td>3.6 A complete software facility of building, maintaining and generating reports from a database.</td>
<td>F. CASE</td>
</tr>
<tr>
<td>3.7 A display using icons and other graphical images rather than typed lines of text.</td>
<td>G. Encryption</td>
</tr>
<tr>
<td>3.8 The lowest layer of the OSI reference model.</td>
<td>H. Document</td>
</tr>
<tr>
<td>3.9 In SDLC, the stage which refers to the technical specifications for input, output, file and processing that will be applied in implementing the candidate system, is known as</td>
<td>I. DFD</td>
</tr>
<tr>
<td>3.10 Common method for checking transposition errors</td>
<td>J. Physical Layer</td>
</tr>
<tr>
<td></td>
<td>K. Tuples</td>
</tr>
<tr>
<td></td>
<td>L. Batch Processing</td>
</tr>
<tr>
<td></td>
<td>M. Check Digit</td>
</tr>
</tbody>
</table>

4. Each statement below has a blank space to fit one of the word(s) or phrase(s) in the list below. Choose the most appropriate option, enter your choice in the “OMR” answer sheet supplied with the question paper, following instructions therein. (1x10)

<table>
<thead>
<tr>
<th>A. Feedback</th>
<th>B. System</th>
<th>C. Interface</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Testing</td>
<td>E. Black box</td>
<td>F. Data dictionary</td>
</tr>
<tr>
<td>G. Module</td>
<td>H. DFD</td>
<td>I. System Analysis</td>
</tr>
<tr>
<td>J. Structured design</td>
<td>K. Environment</td>
<td>L. Structure Charts</td>
</tr>
<tr>
<td>M. Data Dictionary</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.1 A(n) ________ is a set of interacting components that operate within a boundary for some purpose.
4.2 ________ is a process by which the output of a system is measured against a standard and any difference is corrected by altering the input.
4.3 Under the ________ concept, the system is defined in terms of inputs and outputs rather than in terms of how the system effects a transformation.
4.4 The ________ of a system is defined as anything outside the boundary of the system.
4.5 The ________ is the region between the boundaries of system and also the medium for transporting the output from one system to the input of another system.
4.6 The ________ is a listing of all data elements in a database.
4.7 ________ is a method for modeling and understanding complex systems.
4.8 A ________ is the primary tool used in structured system development to graphically depict system.
4.9 Procedural manuals are generally written concurrently with coding and ________.
4.10 ________ is the process of designing the computer programs that will be used in the program.
PART TWO
(Answer any FOUR questions)

5. Define the following terms:
   a) Management Information System (MIS)
   b) System Users
   c) Joint application development (JAD)

   (5+5+5)

6. a) What is the difference between system analysis and system synthesis?
   b) What role does a repository play in system analysis?
   c) What is the object – oriented analysis? How is it similar to, and different from modern structured analysis and information engineering?

   (5+3+7)

7. a) What is model? Describe the difference between the logical model and physical model. Why the data modeling is required? Discuss the usefulness of ER diagrams to represent data modeling.
   b) Explain why a system analyst might want to draw logical models of an automated portion of existing information system rather than simply accepting the existing technical information systems documentation, such as systems flow charts and program flowcharts.

   (8+7)

8. a) Define the terms economic feasibility, technical feasibility, operational feasibility and schedule feasibility.
   b) What three phases make up the system design?
   c) Discuss the relationship between prototyping and JAD.

   (8+3+4)

9. a) Explain the difference between batch and on-line input methods.
   b) List the several input data validation techniques.
   c) List the five common format styles for graphic outputs.
   d) Identify three types of tools that can be used to prototype computer outputs.
   e) What is the fastest-growing medium for computer outputs?

   (5+3+2+3+2)

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