



EXAMINATION PAPER

FACULTY : COMPUTER SCIENCE AND MULTIMEDIA
COURSE : BACHELOR OF INFORMATION TECHNOLOGY (HONS)
YEAR/ SEMESTER : FIRST YEAR / SEMESTER TWO
MODULE TITLE : SYSTEM ANALYSIS AND DESIGN
CODE : BIT123
DATE : 23 – SEPTEMBER, 2019, MONDAY
TIME ALLOWED : 3 HOURS
START : 1:00 PM FINISH : 4:00 PM

Instruction to candidates

1. This question paper has THREE (3) Sections.
2. Answer **ALL** questions in Section A, MCQ.
3. Answer **5** questions in Section B, MSAQ.
4. Answer **2** questions in Section C, MEQ.
5. No scripts or answer sheets are to be taken out of the Examination Hall.
6. For Section A, answer in the OMR form provided.

Do not open this question paper until instructed

(Candidates are required to give their answers in their own words as far as practicable)

SECTION A
Multiple Choice Questions
Attempt All Questions

[30×1=30]

- 1. Which is the most realistic relationship between e-commerce and e-business?**
 - A. E-business is a subset of e-commerce
 - B. E-commerce has no overlap with e-business
 - C. E-commerce is a subset of e-business
 - D. None of the above

- 2. What category of information system determines the sale of an item and a withdrawal from an ATM?**
 - A. Management Information System
 - B. Executive Information System
 - C. Decision Support System
 - D. Transaction Processing System

- 3. Cost-Benefit Analysis is performed during:**
 - A. Analysis phase
 - B. Design phase
 - C. Feasibility study phase
 - D. Implementation phase

- 4. Which of the following techniques and notations would you find within UML?**
 - A. Use cases
 - B. Class diagrams
 - C. State diagrams
 - D. All of the above

- 5. Which model is also called as the classic life cycle or the Waterfall model?**
 - A. Iterative Development
 - B. Linear Sequential Development
 - C. RAD Model
 - D. Incremental Development

- 6. Which is not used in context level diagram?**
 - A. Source
 - B. Destination
 - C. Data flow
 - D. Data Store

7. _____ is a graphical model that illustrates each basic step of data processing routines or system.
- A. System flowchart
 - B. Decision Tables
 - C. Decision Trees
 - D. Organization chart
8. The descriptive property possessed by each entity set is _____.
- A. entity
 - B. attribute
 - C. relation
 - D. model
9. Which relationship specifies an optional behavior?
- A. A generalization
 - B. An inheritance
 - C. An include
 - D. An extend
10. A sequence diagram _____.
- A. is a model of the states of an object and the events that cause the object to change from one state to another
 - B. a picture of the movement of data between external entities and the processes and data stores within the system
 - C. a detailed, logical representation of the entities, associations, and data elements for an organization or business area
 - D. depicts the interaction among objects during a certain period of time
11. _____ are graphical representation of decision table, are also available and aid in the construction of decision tables.
- A. Decision graphs
 - B. Decision trees
 - C. Organization charts
 - D. Organization trees
12. The main ingredient of the report documenting the _____ is the cost benefit analysis.
- A. system analysis
 - B. feasibility study
 - C. system analyst
 - D. system design

13.Entity is a_____.

- A. object of relation
- B. present working model
- C. thing in real world
- D. model of relation

14.System evaluation is carried out:

- A. After the system has been operational for a reasonable time
- B. During system implementation
- C. Whenever managers of user organization want it
- D. Whenever operational staff want it

15.A/An _____ represents a data/store-data at rest, or a temporary repository of data.

- A. arrow
- B. circle
- C. open ended box
- D. square

16._____ is a graphical description of a system's data and how the process transforms the data.

- A. System diagram
- B. Detail flowcharts
- C. Data flow diagram
- D. Data direction diagram

17.The expansion of CASE tools is:

- A. Computer Assisted Self Evaluation
- B. Computer Aided Software Engineering
- C. Computer Aided Software Environment
- D. Core Aids for Software Engineering

18.The primary responsibility of a systems analyst is to:

- A. Specify an information system which meets the requirements of an organization
- B. Write programs to meet specifications
- C. Maintain the system
- D. Meet managers of the organization regularly

19.An _____ is a set of entities of the same type that share the same properties, or attributes.

- A. entity set
- B. attribute set
- C. relation set
- D. entity model

20.If an entity appears in only one relationship then it is:

- A. A 1:1 relationship
- B. A 1:n relationship
- C. A n:1 relationship
- D. A n:m relationship

21.Which of the following technique detects transposition errors?

- A. Check digit
- B. Automatic correction
- C. Existence test
- D. Duplicate processing

22.The structure chart derived by studying the flow through the system supports the activity of:

- A. File design
- B. Program design
- C. Database design
- D. Internal controls design

23.Which of the following suggests phased implementation of the system?

- A. Introduce a new system gradually either by functions or by organizational units
- B. Procure resources in stages and then introduce the system at once
- C. Withdraw the existing system gradually
- D. Allow the new system and old system to run parallel for sometime

24.Class is analogous to:

- A. Object
- B. Blue print
- C. Instance
- D. Record

25.Which of the following represents the condition of an object at a specific moment in time?

- A. Behavior
- B. Properties
- C. Instance
- D. State

26.Some object-oriented systems permit a class to inherit its state (attributes) and behaviors from more than one super class. This is called_____.

- A. multiple inheritance
- B. inheritance
- C. hybrid inheritance
- D. specialization

27. Which of the following statements is false with respect to a use case?

- A. A use case is a scenario for understanding the requirements
- B. It is an interaction between the users and the system
- C. It captures the responsibility of the system to its users
- D. It represents the flow of activities of various processes in the system

28. Which of the following are UML interaction diagrams?

- A. Activity diagram
- B. Sequence diagram
- C. Collaboration diagram
- D. Both 'B' and 'C'

29. Which model is also known as Verification and validation model?

- A. Waterfall model
- B. Big Bang model
- C. V-model
- D. Spiral model

30. What will help the system analyst to work with users to determine system usage?

- A. Use case
- B. Actor
- C. Class
- D. Component

SECTION B
Short Answer Questions
Answer any five (5) questions out of eight (8) questions [5×6=30]

1. Explain any three types of information system.
2. Describe Data Flow Diagram with the concept used in drawings DFDs.
3. Define the term case tool. How it is used for documentation? [2+4]
4. Describe about Decision Table. Draw a decision tree to show the noncash purchase approval actions for a department store. [2+4]
 - A. Identify all conditions and actions and their order and timing (If they are critical)
 - B. Begin building the tree from left to right, making sure you list all possible alternatives before moving to the right.
5. Write your understanding on requirement analysis with its various types.
6. Systems design is the process of defining the architecture, modules, interfaces, and data for a system to satisfy specified requirements. Discuss the various stages of system design.
7. Describe DSDM Model with its principles.
8. Outline the meaning of Activity Diagram. Draw a UML - Activity Diagram for Email Connection. [1+5]

SECTION C

Long Answer Questions

Attempt any two (2) questions but question no. one (1) is compulsory [2×20=40]

1. Study the given case carefully and answer the questions asked at the end.

You are a Manager of a Computer Sales Point which sells Brand New Laptops like, Dell, HP, Lenovo, Acer, Sony, Compaq and Mac Book. As you are a Selling point you have few laptops in stock as well. Also you sell few of accessories like; Charger, Laptop Bag, Laptop Cover, Screen Protector, Battery, Key pad cover and other relevant accessories. Once the laptop is sold company issues VAT Bill.

Questions

- A. Define Entity and Attributes. [2]
 - B. Discuss the Primary and Foreign Keys. [2]
 - C. What is relationship? Show many to many relationships with proper example. [2]
 - D. List all Entities. [3]
 - E. List all Attributes. [3]
 - F. Show Individual Relationship. [2]
 - G. Draw ER Diagram. [2]
 - H. List all the assumptions if any made. [4]
- 2. State your understanding on system implementation. Also explain system maintenance with its types and process. [4+4+12]**
- 3. Write short notes on: (any five) [5×4]**
- A. Software Quality Assurance
 - B. Use Case Diagram
 - C. Waterfall model
 - D. Prototyping
 - E. RAD and JAD
 - F. Data Dictionary

******BEST OF LUCK******