ELIZADE UNIVERSITY, ILARA-MOKIN, ONDO STATE
FACULTY OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

SECOND SEMESTER EXAMINATION, 2017/2018 ACADEMIC SESSION

COURSE TITLE: Information Systems Analysis and Design

COURSE CODE: EEE 324

EXAMINATION DATE: 7th AUGUST 2018

COURSE LECTURER: Dr. B. S. Afolabi

HOD's SIGNATURE

TIME ALLOWED: <u>2 HOURS</u>

INSTRUCTIONS:

1. ANSWER ALL QUESTIONS IN **SECTION A** AND ANY THREE QUESTIONS IN **SECTION B**
2. SEVERE PENALTIES APPLY FOR MISCONDUCT, CHEATING, POSSESSION OF UNAUTHORIZED MATERIALS DURING EXAM.
3. YOU ARE **NOT** ALLOWED TO BORROW ANY WRITING MATERIALS DURING THE EXAMINATION.

1. What is multiplicity for an association?
   a) The multiplicity at the target class end of an association is the number of instances that can be associated with a single instance of source class   b) The multiplicity at the target class end of an association is the number of instances that can be associated with a number instance of source class c) All of the mentioned d) None of the mentioned

2. Which among these are the rules to be considered to form Class diagrams?
   a) Class symbols must have at least a name compartment   b) Compartment can be in random order   c) Attributes and operations can be listed at any suitable place d) None of the mentioned

3. Which of these are the heuristics?
   a) Name classes, attributes, and roles with noun phrases b) Name operations and associations with verb phrases   c) Stick to binary associations d) All of the mentioned

4. An object symbol is divided into what parts?
   a) Top compartment b) Bottom Compartment c) All of the mentioned d) None of the mentioned

5. Which of the following Information systems are aimed at improving the routine business activities on which all organizations depend?
   a) Management Information systems b) Decision support systems c) Transaction processing systems d) Management support systems e) Transaction Information systems.

6. Which of the following strategies are adopted if information requirements are not well-defined?
   a) Rapid application development method b) Structured analysis development method
   c) Systems development life cycle method d) Prototyping method e) Spiral method.

7. Structured Programming involves:
   a) functional modularization b)   localization of errors c)   decentralized d) stress on analysis e) stress on requirements gathering.

8. Which of the following is not a fact-finding technique?
   a) Third party enquiry b) Interview c) Questionnaire d) Record reviews e) Observation.

9. Which of the following questions are useful in evaluating data flow diagrams?
   a) Are there any unnamed components in the data flow diagram? b) Are there any processes that do not receive input? c) Are there any data stores that are input but never referenced? d) Both (a) and (b) above e) All (a), (b) and (c) above.

10. In system design and development field what does spaghetti code mean?
    a) programs written in unstructured languages. b) well structured and well documented code. c) program code that has many GOTO statements. d) Both (a) and (c) above e) Both (b) and (c) above.

11. Which of the following statements is false with respect to a Data Dictionary?
    a) It is a repository of the elements in a system. b) data dictionary and data store both are same c) It manages detai
    d) It communicates the common meanings for system elements and activities. e) It documents system features.

12. Match the following and select the correct options given under
    i) physical design A) Documentation
    ii) interview   B) Type of output
    iii) Input design C) defines design specifications that are to be coded
    iv) Installation procedure D) a data gathering technique

v) report   E) Identification and design of interfaces to enter data

    a) i-D, ii – A, iii-B, iv – C, v- E   b) i-C, ii – D, iii-E, iv – A, v- B
    c) i-A, ii – D, iii-B, iv – C, v- E   d) i-D, ii – A, iii-E, iv – B, v- C
    e) i-B, ii – A, iii-D, iv – C, v- E.

13. Cost-Benefit Analysis is performed during
    a) Analysis phase b) Design phase c) Feasibility study phase d) Implementation phase e) Maintenance phase.

14. What does conceptual modelling represents?
    a) Responsibility b) Attributes c) Important relationships between them d) All of the above

15. What are the sequences of steps for conceptual process?
    a) Add Classes b) Add Attributes c) Add Association d) All of the mentioned e) None of the mentioned

16. Candidate classes should include which of the following?
    a) Physical entities, individuals b) Things managed, tracked, recorded in the real world
    c) Associations d) a, b e) b, c

17. Which of the following statements is false?
    a) Add usecases to the list at any point of time b) Reviews can be done on noun phrases designating characteristics
    of other entities c) Usecase represent interactions which are result of collaborative activity d) All of the above

18. Which of these should follow a review to the list?
    a) Noun or Noun phrases designating characteristics of other entities in the list b) Noun phrases referring to the
    activities or behaviors c) Entities that are same with different names d) All of the mentioned

19. Which of the following guidelines helps with adding attributes?
    a) Adjectives and modifiers sometimes give clues about class attributes b) Attribute names should be taken from
    problem domain c) Attribute should be added for object identification d) a, b e) b, c

20. What is the third step in sequence for conceptual class modelling?
    a) Adding Class b) Adding Association c) Adding Attribute d) None of the mentioned

21. Which of these important verb phrases should be modelled?
    a) Below, under b) Reports to, Consults c) Completes, Disposes of d) All of the mentioned

22. Requirements analysis is critical to the success of a development project.
    a) True   b) False   c) Depends upon the size of project

23. _____ and _____ are the two issues of Requirement Analysis.
    a) Performance, Design b) Stakeholder, Developer   c) Functional, Non-Functional

24. The requirements that result from requirements analysis are typically expressed from one of three perspectives or
    views. What is that perspective or view?
    a) Developer b) User c) Non-Functional d) Physical

25. Requirements Analysis is an Iterative Process.
    a) True b) False

26. Coad and Yourdon suggested _____ selection characteristics that should be used as an analyst considers each
    potential object for inclusion in the requirement analysis model.
    a) Three b) Four c) Five d) Six

27. Requirements should specify 'what' but not 'how'.
    a) True   b) False

28. The Unified Modeling Language (UML) has become an effective standard for software modelling. How many
    different notations does it have?
    a) Three b) Four c) Six d) Nine

29. Which model in system modelling depicts the dynamic behaviour of the system?
    a) Context Model b) Behavioral Model c) Data Model d) Object Model
30. Which of the following represents the use of Conceptual models during product design?
    a) Understanding the problem design b) Setting Data Requirements c) Validating Requirements d) All of the mentioned

Section B (attempt any **THREE** questions in this section)

Question 1

a) Compare the various methods used for requirements gathering under cost, user involvement and type of information sought. (12 Marks)

b) Why would you need to observe a system before embarking on software for that system or organization? (4 Marks)

c) Would adopt a SDLC for developing a small application on a PC? Would you modify it in any way? Give reasons for your answer. (4 Marks)

Question 2

What the fact finding technique(s) would you use in each of the following circumstances? Explain why and how each technique will be employed in each case.

a) Deciding on the design of a new airline booking technique. (7 Marks)

b) Identifying the problem areas of an existing system.   (6 Marks)

c) Inquiring the information available to decision makers.   (7 Marks)

Question 3

Consider an automated library circulation system. Every book has a bar code, and every burrower has a card bearing a ba code. When a burrower wishes to check out a book, a librarian enters C at the computer terminal, then scan the bar codes or the book and the burrower's card. Similarly, when a book is returned, a librarian enters R and the book is again scanned Librarians can add books (+) to the library collection or remove from them (-). Librarians and burrowers can go to a terminal and determine all the books in the library by a particular author (the librarian or burrower enters A= followed by the author's name), all the books with a specific title (T= followed by the title), or all the books in a particular subject are: (S= followed by the subject area). Finally, if a burrower wants a book currently checked out, a librarian can place a hold or the book so that, when it is returned, it will be held for the burrower who requested it (H= followed by the number of the book). Draw the use-case diagram of the library information system and give descriptions of the use cases. (8 Marks fo identification and 12 marks for drawing)

Question 4

a) Database designer has complained about plans to construct a logical model for a video club that also deals with audio tapes, music on CDs and loan out books. He believes we should just design the database using the database management system. Give three reasons why requirements should be specified in an implementation-independent manner. What would you be looking out for in the requirement analysis if you think it is essential for the designer's work   (10 Marks)

b) Make a list of traits that a system analyst should have.   (5 Marks)

c) What are the various elements of system?   (5 Marks)