COA 305

B.A./B.Sc. (VIth SEMESTER) EXAMINATION, 2023-24

COMPUTER APPLICATION

(Software Engineering and Project Management)

(CBCS Mode)

AFFIX PRESCRIBED RUBBER STAMP

Date (तिथि) : _____

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5626

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Time : 1:30 Hrs. **Max. Marks : 75**
समय : 1:30 घण्टे **अधिकतम अंक : 75**

नोट : पुस्तिका में 50 प्रश्न दिये गये हैं, सभी प्रश्न करने होंगे। प्रत्येक प्रश्न 1.5 अंक का होगा।

Important Instructions :

1. The candidate will write his/her Roll Number only at the places provided for, i.e. on the cover page and on the OMR answer sheet at the end and nowhere else.
2. Immediately on receipt of the question booklet, the candidate should check up the booklet and ensure that it contains all the pages and that no question is missing. If the candidate finds any discrepancy in the question booklet, he/she should report the invigilator within 10 minutes of the issue of this booklet and a fresh question booklet without any discrepancy be obtained.

महत्वपूर्ण निर्देश :

1. अभ्यर्थी अपने अनुक्रमांक केवल उन्हीं स्थानों पर लिखेंगे जो इसके लिए दिये गये हैं, अर्थात् प्रश्न पुस्तिका के मुख्य पृष्ठ तथा साथ दिये गये ओ०एम०आर० उत्तर पत्र पर, तथा अन्यत्र कहीं नहीं लिखेंगे।
2. प्रश्न पुस्तिका मिलते ही अभ्यर्थी को जाँच करके सुनिश्चित कर लेना चाहिए कि इस पुस्तिका में पूरे पृष्ठ हैं और कोई प्रश्न छूटा तो नहीं है। यदि कोई विसंगति है तो प्रश्न पुस्तिका मिलने के 10 मिनट के भीतर ही कक्ष परिप्रेक्षक को सूचित करना चाहिए और बिना त्रुटि की दूसरी प्रश्न पुस्तिका प्राप्त कर लेना चाहिए।

1. What is the software engineering ?

   (A) Design a software

   (B) Testing a software

   (C) Application of engineering principles to the design a software

   (D) None of these

2. Who proposed the spiral model ?

   (A) Barry Boehm

   (B) Pressman

   (C) Royce

   (D) IBM

3. What is the full form of the "COCOMO" model ?

   (A) Cost Constructive Estimation Model

   (B) Constructive Cost Estimation Model

   (C) Constructive Case Estimation Model

   (D) Constructive Cost Estimating Model

4. Quality management is known as -

   (A) SQL

   (B) SQA

   (C) SQM

   (D) SQA and SQM

5. What is the first step in the software development lifecycle ?

   (A) System design

   (B) Coding

   (C) System testing

   (D) Preliminary investigation and analysis

6. Which of the following model has a major downfall to a software development lifecycle in terms of the coding phase :

(A) 4GT model

(B) Waterfall model

(C) RAD model

(D) Spiral model

7. Which one of the following activities is not recommended for software process in software engineering :

(A) Software evolution

(B) Software verification

(C) Software testing and validation

(D) Software designing

8. What does a data store symbol in the data flow diagram signify ?

(A) Logical file

(B) Physical file

(C) Data structure

(D) All of the above

9. Which one of the following is an incorrect activity for the configuration management of a software system :

(A) Change management

(B) System management

(C) Internship management

(D) Version management

10. Which of the following is used to predict the effort as a function of LOC or FP ?

(A) COCOMO

(B) FP-based estimation

(C) Both COCOMO and FP-based estimation

(D) Process-based estimation

11. What does the study of an existing system refer to ?

(A) Details of DFD

(B) Feasibility study

(C) System analysis

(D) System planning

12. Which of the following word correctly summarized the importance of software design :

(A) Quality

(B) Complexity

(C) Efficiency

(D) Accuracy

13. What is developed by utilizing the historical cost function ?

(A) Parkinson's Law

(B) Expert Judgement

(C) Algorithmic cost modeling

(D) Estimation by analogy

14. What is the primary characteristics of the iterative model ?

(A) Sequential development

(B) Emphasis on risk management

(C) Minimal documentation

(D) Continuous feedback and refinement

15. What is the main advantage of the incremental model ?

(A) Low initial cost

(B) High flexibility for changes

(C) Quick project completion

(D) Emphasis on documentation

16. What is the primary characteristics of the prototype model ?

(A) Sequential development

(B) Emphasis on risk management

(C) Quick creation of a model to visualize requirements

(D) Minimal documentation

17. Real rate of return is equal to :

(A) Nominal Rate × Inflation Rate

(B) Nominal Rate ÷ Inflation Rate

(C) Nominal Rate - Inflation Rate

(D) Nominal Rate + Inflation Rate

18. The payback period is the period -

(A) A project takes to payback the loan taken to purchase the capital assets

(B) Equal to the useful life of the machines

(C) A project takes to recover its initial cash outflow

(D) Over which the project will be getting operating cash inflows

19. In a software project, COCOMO is used to estimate :

(A) Size, effort and duration based on the cost of the software

(B) Size and cost based on the duration of the software

(C) Size and duration based on the effort of the software

(D) Effort, cost and schedule based on the size of the software

20. Consider the basic COCOMO model where E is the effort applied in person-months, D is the development time in chronological months, KLOC is the estimated number of delivered lines of code (in Thousands) and a, b, c, d have their usual meanings. The basic COCOMO equations are of the forms :

(A) $E = a(KLOC)^b, D = C(E)^d$

(B) $D = a(KLOC)^b, E = C(D)^d$

(C) $E = a^b, D = C\,(KLOC)^d$

(D) $E = ae^D, D = C\,(KLOC)^b$

21. Estimation of software development effort for organic software in basic COCOMO is :

(A) $E = 2.0(KLOC)^{1.5}$ per month

(B) $E = 3.4(KLOC)^{1.06}$ per month

(C) $E = 2.4(KLOC)^{1.05}$ per month

(D) $E = 2.4(KLOC)^{1.07}$ per month

22. Which of the following software development phase if consume more time the product would bug free :

(A) Cost and Feasibility estimation

(B) Coding

(C) Testing

(D) Documentation

23. What combines procedures and tools to manage different versions of configuration objects that are created during the software process ?

(A) Change control

(B) Version control

(C) SCIs

(D) None of these

24. Which of the following is not a software configuration management activity -

(A) Configuration item identification

(B) Risk management

(C) Release management

(D) Branch management

25. The definition and use of configuration management standards is essential for quality certification in :

(A) ISO 9000

(B) CMM

(C) CMMI

(D) All of the above

26. Which of the following is not a SQA plan for a project -

(A) Evaluation to be performed

(B) Amount of technical work

(C) Audits and reviews to be performed

(D) Documents to be produced by a SQA groups

27. Which of the following is not an appraisal cost in SQA.

(A) Inter processing inspection

(B) Maintenance

(C) Quality Planning

(D) Testing

28. What of the following are objectives for FTR ?

(A) Allow senior staff members to correct errors

(B) Assess Programmer Productivity

(C) Determining who introduced an error into a program

(D) Uncover errors in software work products

29. Which of the following items are not measured by software project metrics -

(A) Inputs

(B) Markets

(C) Outputs

(D) Results

30. Problem-based estimation is based on problem decomposition which focuses on :

(A) Information domain values

(B) Project schedule

(C) Software function

(D) Both (A) and (C)

31. Process- based estimation techniques require problem decomposition based on :

(A) Process schedule and software functions

(B) Process activities and software functions

(C) Software functions and process activities

(D) None of these

32. Which of the following components is not a part of Entity Relationship diagrams -

(A) Ellipse

(B) Double rectangle

(C) Double lines

(D) Hexagons

33. Attributes in Entity-Relationship diagram are represented by :

(A) Circle

(B) Line

(C) Rectangle

(D) Ellipse

34. Consider the "supply" relationship relating the entities "supplier" and "product". Under default assumption, what will be the cardinality of the "supply" relationship -

(A) I:N

(B) I:I

(C) M:N

(D) N:I

35. Data dictionary is also known as :

(A) Function catalog

(B) Data catalog

(C) Storage catalog

(D) System catalog

36. The entity relationship diagram :

(A) Depicts relationship between data objects

(B) Depicts functions that transform the data flow

(C) Indicates how data are transformed by the system

(D) Indicates system reactions to external events

37. The number of entities to which another entity can be related through a relationship set's called -

(A) Cardinality

(B) Entity

(C) Schema

(D) Attributes

38. The relations brings from E-R model will usually be in :

(A) Third normal form

(B) Second normal form

(C) First normal form

(D) Any of them given above

39. If two entities have many to many relationships mostly results in how many tables -

(A) 3

(B) 2

(C) 1

(D) 4

40. Select the E-R modelling technique is a-

(A) Left-right approach

(B) Bottom-up approach

(C) Top-down approach

(D) None of the above

41. The process of hiding the details of entities in the E-R model is known as :

(A) Generalization

(B) Abstraction

(C) Specialization

(D) None of these

42. Select about weak entity set in an E-R diagram -

(A) Has a primary key

(B) Is not existence dependent on a dominant entity

(C) Must be part of a one to many relationship set

(D) Must not participate as owner in an identifying relationship with another entity set

43. Objects are executed :

(A) Sequentially

(B) Parallel

(C) Sequentially and Parallel

(D) None of these

44. How is generalization implemented in object oriented programming languages ?

(A) Inheritance

(B) Polymorphism

(C) Encapsulation

(D) Abstract class

45. Which of the following is involved in the system planning and designing phase of the Software Development Life Cycle (SDLC).

(A) Sizing

(B) Parallel Run

(C) Specification freeze

(D) All of the above

46. Arrange the following activities for making a software product by utilizing 4GT :

(i) Design strategy

(ii) Transformation into Product

(iii) Implementation

(iv) Requirement gathering

(A) (iv), (i), (iii), (ii)

(B) (iv), (iii), (ii), (i)

(C) (i), (ii), (iii), (iv)

(D) (i), (iv), (ii), (iii)

47. Which of the following model is consider as best to a software development life cycle in terms of all phases -

(A) 4GT Model

(B) Water fall Model

(C) RADO Model

(D) Spiral Model

48. Which design model is equivalent to the detailed drawing of access points and external utilities of a building -

(A) Architectural design

(B) Component level design

(C) Data design

(D) Interface design

49. White Box testing techniques are ?

(A) Statement coverage testing

(B) Decision coverage testing

(C) Data flow testing

(D) All of the above

50. Which testing techniques is used for usability testing ?

(A) White-box testing

(B) Grey box testing

(C) Black box testing

(D) Combination of all

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