Write the following information in the first page of Answer Script before starting answer

ODD SEMESTER EXAMINATION: 2020-21

Exam ID Number_____

Course_____ Semester_____

Paper Code_____Paper Title_____

Type of Exam: _____ (Regular/Back/Improvement)

Important Instruction for students:

1. Student should write objective and descriptive answer on plain white paper.
2. Give page number in each page starting from 1st page.
3. After completion of examination, Scan all pages, convert into a single PDF, rename the file with Class Roll No. (2019MBA15) and upload to the Google classroom as attachment.
4. Exam timing from 10am – 1pm (for morning shift).
5. Question Paper will be uploaded before 10 mins from the schedule time.
6. Additional 20 mins time will be given for scanning and uploading the single PDF file.
7. Student will be marked as ABSENT if failed to upload the PDF answer script due to any reason.

BACHELOR of COMPUTER APPLICATION
THIRD SEMESTER
SOFTWARE ENGINEERING
BCA – 302 [REPEAT]

Duration: 3 hrs. **Full Marks: 70**

〔 **PART-A: Objective** 〕

Time: 20 min. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. _____ is the piece of software that translate a computer program written in some specific programming language into another programming language
a. Interpreters **b.** Compiler
c. Assembler **d.** Language translator

2. Which one is not a part of utility software?
a. Antivirus. **b.** MS-Word.
c. Compression tool. **d.** NTFS

3. The second phase of prototype model is known as_____
a. Iterative development phase b. Prototype development phase
c. Design phase d. testing phase

4. The process of checking the functionality of an application as per the customer needs without taking any help of automation tools is known as__
a. Automation testing **b.** Manual testing
c. Condition testing **d.** None of the above

5. HCI is previously known as___
a. Human computer Interface. **b.** Machine- Man interaction
c. Man- Machine Interaction **d.** Computer Human interaction

6. Number of complexity adjustment factors used in functional point analysis -------
a. 7 **b.** 12
c. 10 **d.** 14

7. A company needs to develop digital signal processing software for one of its newest inventions. The software is expected to have 4000 lines of code. The company needs to determine the effort in person months needed to develop this software using basic COCOMO model. The multiplicative factor for this model is given as 2.8 for the software development on embedded systems. While the exponentiation factor is given as 1.20. What is the estimated effort in person months?
a. 234.25 **b.** 932.50
c. 230.25 **d.** None of the above.

8. The testing in which code is checked----------
a. Black box testing. **b.** White box testing.
c. Red box testing. **d.** Green box testing.

9. The complexity adjustment factor '3' indicates_____

a. No influence **b.** Moderate

c. Average **d.** Significant.

10. When two or multiple modules share common data structure and work on different part of it, it is called----------

a. Common coupling **b.** Share coupling

c. Data coupling **d.** Stamp coupling

11. The top down approach starts with_____

a. Identification of Error **b.** Identification of the main components

c. Feature extraction **d.** None of the above

12. Software safety is equivalent to software reliability.

a. True **b.** False

c. May be true **d.** None of the above.

13. Which one of the following is TRUE?

a. The requirements document also describes how the requirements that are listed in the document are implemented efficiently.

b. Consistency and completeness of functional requirements are always achieved in practice.

c. Prototyping is a method of requirements validation

d. Requirements review is carried out to find the errors in system design.

14. A module is said to have ____ if it performs a group of tasks that are associated with each other very loosely.

a. Sequence Cohesion **b.** Coincidental Cohesion

c. Logical Cohesion **d.** Both A and B

15. Reuse based software engineering is a software engineering strategy where the development process is geared to reusing existing software.

a. True **b.** false

c. May be false **d.** None of the above.

16. The coupling between different modules of a software is categorized as follows

I.Content coupling
II. Common coupling
III. Control coupling
IV. Stamp coupling
V. Data coupling

a. I-II-III-IV-V **b.** V-IV-III-II-I

c. III-V-II-IV **d.** IV-II-V-III-I

17. Sandwich Testing is a strategy in which_____

a. Lower level modules are tested with top level at the same time in which top modules are integrated with lower modules.

b. Top level modules are tested with lower level modules at the same time in which lower modules are integrated with top modules.

c. Top level modules are tested previously than lower level modules at the same time in which lower modules are integrated with top modules.

d. None of the above.

18. As the number of partition increases, the partition ___ and _____increases.

a. Time

b. Complexity

c. Cost

d. Both b and c

19. Which of the following is NOT desired in a good Software Requirement Specifications (SRS)(SRS) document?

a. Functional requirement

b. Nonfunctional requirement

c. Goals of implementation

d. Algorithm for software implementation

20. Which one is not a characteristic of PERT?

a. It takes advantage by using time network analysis technique

b. It serves as a base for obtaining the important facts for implementing the decision making

c. Enter or leave a data store.

d. The current date line shows today's date on the bar chart .

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PART-B : Descriptive

Time : 2hr. 40min **Marks : 50**

[Answer question no.1 & any four (4) from the rest]

1. Write down the importance of SDLC during development of large software product. Briefly discuss the SDLC framework with proper sequence. **3+7=10**

2. Consider the details of a project as shown in the table. **5+5=10**

Activity	*Predecessor(S)*	*Duration(Days)*
A	____	*3*
B	*A*	*4*
C	*A*	*2*
D	*B*	*5*
E	*C*	*1*
F	*C*	*2*
G	*D,E*	*4*
H	*F,G*	*3*

a. Construct the CPM network.
b. Determine the critical path and project completion time.

3. **a.** What do you mean by problem partitioning ? Write down the benefits of problem partitioning. **2+2+6=10**

b. Consider the following details

Function Type	*Simple/Low*	*Average*	*Complex/High*
Internal logical File	5	7	10
External Interface File	4	5	7
External output	3	4	5
External Input	2	3	6
External Inquiry	2	3	6

Compute the Functional Point when all complexity adjustment factor (CAF) and weighting factors are average.
User Input=60
User Output=50
User Inquiries= 35
External interface= 5
[hint: complexity adjustment factor for average is ′ 3′]

4. Distinguish between error and failure. Which one of them is detected by testing? How does inheritance promote software Re-usability? What do you understand by the term encapsulation in the context of software design? What are the advantages of encapsulation? **2+3+2+3= 10**

5. What are the different software life cycle models? Why is it important? Briefly explain all the phases of the Classical Waterfall Model with a neat diagram **2+3+5=10**

6. What is HCI? Write down the Shneiderman's Eight Golden Rules. **6+4=10**

7. What is gantt chart tool? Why we use a gantt chart ? explain with example. **5+5=10**

8. Discuss the stages of software quality maintenance process with proper diagram. **10**

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