

UNIVERSITY OF CALCUTTA

FAKIRCHAND COLLEGE

B.Sc. (HONOURS) SEMESTER-VI, 2021

INTERNAL ASSESSMENT

F.M. – 30

PAPER – CMSA-CC-6-13

(Answer Question **no.1** and any **four** from the rest)

1. Answer any **four** questions: 1.5 × 4 = 6
 - a) What is the purpose of SRS document?
 - b) What do you mean by physical data independence?
 - c) What do you mean by V model in SDLC?
 - d) Differentiate between error and failure?
 - e) Write two limitations of waterfall model?
 - f) What is cohesion and coupling?
 - g) Name the different types of software maintenance techniques?
2. Write the difference between logical DFD and physical DFD. 6
3. What is context diagram in DFD? Why it is called level 0 DFD? 3+3
4. Name the different phases of spiral model (Description not required)? Why spiral model is called Meta model? 3+3
5. Explain the phases of V-Model? What are its advantages of it? 4+2
6. Discuss any two phases of software testing life cycle in brief. Write some characteristics of STLC? 3+3
7. Discuss briefly about Black-box testing. 6
8. Describe the approaches for integration testing in brief. 6
9. Explain Unit testing in software engineering. 6

UNIVERSITY OF CALCUTTA

FAKIR CHAND COLLEGE

COMPUTER SCIENCE

B.Sc. SEM-VI (Honours) Examination-2021

Paper: CC-14

Internal Assessment

Full Marks: 30

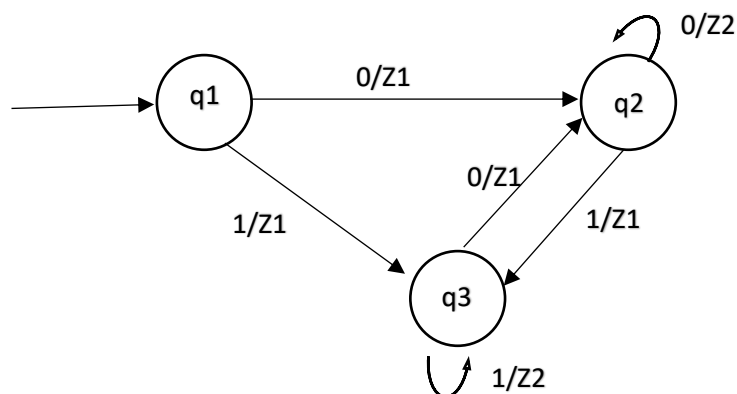
Answer Q.No.1 and any four from the rest.

Answer any four questions:

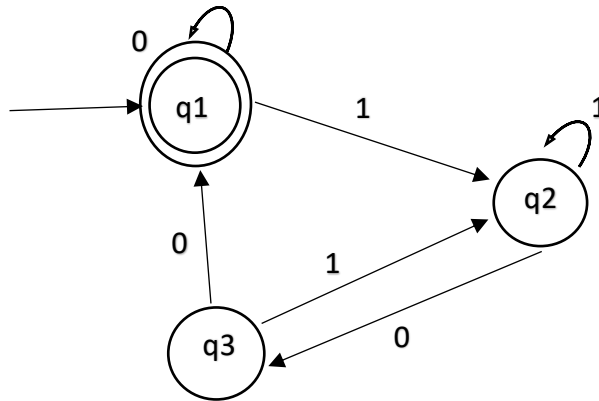
1.5X4=6

- a) What is finite automata?
- b) What is transition system?
- c) Construct a regular expression for the language over the set $\Sigma=\{a,b\}$ in which total number of a's are divisible by 3?
- d) What are the uses of Context free grammars?
- e) Difference between Deterministic FA and Non-Deterministic FA?
- f) What is push down automata?
- g) Differentiate NFA and DFA?

2. Define Moore machine. Consider a Melay machine given below, construct a Moore machine equivalent to this Melay machine. 2+4



3. Find a grammar generating $\{a^i b^n c^n \mid n \geq 1, i \geq 0\}$ 6
4. Write a brief note on chomsky classification of grammar. 6
5. What do you mean by regular expression? Prove that the regular expression $R = a^* + 1^*(011)^*(1^*(011)^*)^*$ also describes the same set of strings. 2+4
6. State Arden's theorem. Consider the transition system given below, prove that the strings recognized are $(0+1(1+01)^*00)^*$ 2+4



7. Obtain a grammar to generate the following over $\{a,b\}$. $L = \{\text{set of all palindrome}\}$ 6
8. Give the formal definition of turing machine. Obtain a transition diagram to generate the following over $\{a,b\}$: of a's divisible by 2 and multiple by 3. 4+2
9. Convert any NFA to DFA of your choice. 6

FAKIR CHAND COLLEGE
INTERNAL EXAMINATION SEMESTER – VI
Subject: Computer Science

F.M. – 30

Paper: CMSA-DSE-A-4

(Answer Question no. 1 and any four from the rest.)

1. Answer any four questions: 1.5*4 = 6
 - a) what is multimedia?
 - b) what do you mean by font?
 - c) what is intercap?
 - d) write two differences between hypertext and hypermedia?
 - e) write the use of css in multimedia.
 - f) what is BMP?
 - g) what is PDF?

2. Discuss briefly about different Components of Multimedia. 6
3. Discuss about card or page based authoring tools and write two advantages of it? 4+2
4. write a short note on 24-bit colour images. 6
5. How to digitize sound in multimedia? 6
6. Explain about Voice Synthesis? State the use and properties of Holographic images? 2+4
7. Discuss about three types of file format in animation? 2*3=6
8. What is Image Animation? How Image Annotation is done? 3+3
9. Explain about Handwriting Recognition? How does a Handwriting engine work? 2+4

FAKIR CHAND COLLEGE

INTERNAL EXAMINATION SEMESTER – VI

Subject: Computer Science

F.M. – 30

Paper: CMSA-DSE-B-4

(Answer Question no. 1 and any four from the rest.)

1. Answer any four questions: 1.5*4 = 6
 - a) what is life cycle of JSP?
 - b) what do you mean by factory method?
 - c) write a Java script program to print the value of a variable?
 - d) what do you mean by view layer?
 - e) write advantages of cookies?
 - f) what is JSP API?
 - g) write the advantage of MVC architecture?

2. what is servlet? Write the features of servlet? 3+3
3. write the difference between JSP and servlet? write to two advantages of JSP. 4+2
4. what do you mean by cookies? what is persistent and non-persistent cookies? 3+3
5. Discuss about lifecycle of a servlet? 6
6. what is jQuery ? Mention the difference between JavaScript and jQuery. 2+4
7. write the states involved in JSP lifecycle. 6
8. what are the features of jQuery? Mention some advantages of jQuery? 3+3
9. what do you mean by DAO? write the advantages of DAO pattern? 2+4