

JK LAKSHMIPAT UNIVERSITY, JAIPUR
INSTITUTE OF ENGINEERING AND TECHNOLOGY
EndTerm Examination (BackLog as Applicable), November 2018
B. Tech in Computer Science Engineering

Roll No.....

CSE506 : SYSTEM ANALYSIS AND DESIGN

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
 2. Assume suitable data wherever required and mention it clearly.
 3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.
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Q.1A Objective type multiple choice questions (10 questions @ 1 mark) 10

- i. The _____ symbol is used in a flowchart to represent a calculation task.
 - a) Input
 - b) Output
 - c) Process
 - d) Start
 - e) Stop
- ii. Which of the following systems implementation approaches should be used if you want to run the old system and the new system at the same time for a specified period?
 - a) Direct
 - b) Pilot
 - c) Parallel
 - d) Phased
 - e) None of the above
- iii. Which of the following is not considered as a tool at the system design phase?
 - a) Piechart
 - b) data-flow diagram
 - c) decision table
 - d) systems flowchart
 - e) None of the above
- iv. To avoid errors in transcription and transposition, during data entry, the System Analyst should
 - a) provide for a check digit
 - b) provide for a hash totals
 - c) provide batch totals
 - d) All of the above
- v. A system design aid should primarily
 - a) help analyse both data and activities
 - b) help in documentation

	c) generate code d) using a graphical user interface e) None of the above	
vi	Structured Programming involves a) decentralization of program activity b) functional modularization c) localisation of errors d) All of the above e) None of the above	
vii	The conditions immediately outside a system is called a) The boundary b) The interface c) The environment d) The protocols e) None of the above	
viii	A feasibility document should contain all of the following except: a) project name b) problem descriptions c) feasible alternative d) data-flow diagrams e) None of the above	
ix	Which of the following is not a characteristic of a system a) operates for some purpose b) has homogeneous components c) has interacting components d) operates within a boundary e) None of the above	
x	A file containing multiple indices to the data is called a/an a) indexed file b) sequential file c) indexed-sequential file d) inverted file e) None of the above	
Q.2	Short answer type questions (4 questions @ 2.5 marks)	10
i.	Discuss briefly the purpose of Sequence Diagrams.	
ii.	Distinguish between logical process models and physical process models.	
iii.	Summarize the distinctions between the analysis phase and the design phase of the SDLC.	
iv.	What is white space, and why is it important?	
Q.3A	What is system analyst? What are the roles of system analyst?	05
Q.3 B	What do you understand by feasibility study? What are the results or findings should be noted in feasibility report?	05
Q.4A	Briefly describe how prototypes can be used in other stages of the system development life cycle.	05
Q.4B	Describe the role and responsibilities of the following: i) Business analysts,	05

ii) Stakeholders

- Q.5A Activity diagrams can be used to model different aspects of a system. Give examples of THREE different applications of activity diagrams in systems modeling. 05
- Q.5B UML statecharts/state machines and activity diagrams are based on a similar notation. They have however completely different meanings. Discuss the main differences between these diagrams. 05
- Q.6A Briefly explain the difference between a high-level DFD and a use case diagram. 05
- Q.6B Suppose that you are a project manager using the waterfall development methodology on a large and complex project. Your manager has just read the latest article in Computerworld that advocates replacing the waterfall methodology with prototyping and comes to your office requesting you to switch. What do you say? 05
- OR
- Q.6B Create a use case diagram that would illustrate the use cases for the following online university registration system: The system should enable the staff members of each academic department to examine the courses offered by their department, add and remove courses, and change the information about courses (e.g., the maximum number of students permitted). It should permit students to examine currently available courses, add and drop courses to and from their schedules, and examine the courses for which they are enrolled. Department staff should be able to print a variety of reports about the courses and the students enrolled in them. The system should ensure that no student takes too many courses and those students who have any unpaid fees are not permitted to register. (Assume that a fees data store is maintained by the university's financial office, which the registration system accesses but does not change.) 05
- Q.7A List the seven types of cohesion. Why do the various types of cohesion range from good to bad? Give an example of good coupling and an example of bad coupling. 05
- Q.7B Assume that the size of an organic type software product has been estimated to be 32,000 lines of source code. Assume that the average salary of software engineers be Rs. 15,000/- per month. Determine the effort required to develop the software product and the nominal development time. 05
- OR
- Q.7B A department store has a wedding registry. This registry keeps information about the customer (usually the bride), the products that the store carries, and the products for which each customer registers. Customers typically register for a large number of products, and many customers register for the same products. Draw class diagram for the above situation.
- Q.8A Explain the difference between a waterfall and an iterative/incremental System Development Life Cycle (SDLC). Illustrate your answer with diagrams. 10
- Q.9A Draw a use-case diagram and a set of activity diagrams for the following doctor's office system. Whenever new patients are seen for the first time, they complete a patient information form that asks their name, address, phone number, and brief medical history, which are stored in the patient information file. When a patient calls to schedule a new appointment or change an existing appointment, the receptionist checks the appointment file for an available time. Once a good time is found for the 10

patient, the appointment is scheduled. If the patient is a new patient, an incomplete entry is made in the patient's file; the full information will be collected when the patient arrives for the appointment. Because appointments are often made far in advance, the receptionist usually mails a reminder postcard to each patient two weeks before the appointment.

- Q.9B Explain the relationship between a DFD context diagram and the DFD level 0 diagram. 9 10
and also the relationship between a DFD level 0 diagram and DFD level 1 diagram(s).
Illustrate with example.

OR

- Q.9B There are many characteristics/attributes of a good software design. One of them is 10
usability. Explain the meaning of usability and give FIVE examples of poor software
system usability.