Total No. of Pages: 01

B. Tech. (SE)

Mid-Semester Examination

Roll No.....

Third *Semester*

(Sep 2018)

SE205 WEB TECHNOLOGY

Time: 1.5hrs

Max. Marks: 30

Note: ***Answer ALL questions. Assume suitable missing data if any.***

Q1. Differentiate between the following: - (2.5x2=5)

a) Push protocol and Pull protocol

b) Web Service and Web App

Q2. a) What is the "Service" view of Internet? Which set of Internet protocols enable transfer of an e-mail? (5)

b) Which hierarchical application layer service acts as a phone book for mapping URLs to IP addresses? (5)

Q3. a) Describe the HTTP Connection Types and their effects on the round trip times for communication between the client-server. (5)

b) Fetching something over the network is both slow and expensive. What can be done to improve the Quality of Service (QoS) of the web servers? (5)

Q4. How is an index created in a typical Web IR system? Represent diagrammatically & elaborate the steps involved in the process. (5)

OR

Describe the journey of Web from Web of Documents to the intermittent Web of People to the current Web of Data. (5)

END

- 274 -

Total No. of Pages: 02 *Roll No. ... .*

B. Tech. (SE) **Third *Semester***

End Semester Examination ***(Nov/Dec- 2018)***

SE205 WEB TECHNOLOGY

Time: 3hrs ***Max. Marks: 50***

Note: ***Question No. 1 is compulsory. Answer any 4 from the rest. Assume suitable missing data if any.***

Q1. Answer the following:- (2x5=10)

a) What is an IP address? How is it related to URL and DNS?

b) What is micro-blogging? Give examples of two most popular micro-blogs

c) What do you understand by API? Why are they used?

d) What are the categories in which Web IR tools can be divided?

e) Define the sentiment analysis task tuple.

Q2. a) Describe the TCP/IP protocol for virtual terminal service that enables the establishment of a connection to a remote system in such a way that the local terminal appears to be a terminal at the remote system. (5)

b) Differentiate between the following:- (2x2.5=5)

i. ASCII and Binary FTP Connection modes

ii. Web Service and Web App

Q3. a) In what ways can an Internet Service Provider configure network connections? (5)

b) Describe the HTTP Response message format and fields. What is the meaning of HTTP response message status code: 400? (5)

Q4. a) Write an HTML code to create a page doc1.htm which creates a 3X3 table. The contents of the first row should appear as headings and they should be center aligned, while the second row should be left aligned & the third row right aligned (content of cells can be anything). Create another page named doc2.htm which demonstrates the use of nested lists (content of the lists can be anything) and has an image at right side of the page. At the bottom of both the pages create a link to

P T O

take user to the top of that page and also create a hypertext link to move from doc1.htm to doc2.htm and vice-versa. (5)

b) Write a JavaScript program to implement (i) Palindrome (ii) Fibonacci. (5)

Q4. a) How are programming language, scripting language and mark-up language related? Write a program in PHP to display the use of multi-dimensional arrays (7)

b) Explain the Model-View-Controller Architecture for Web Application Development. (3)

OR

Give an example of writing a VIEW in Django? (3)

Q5. a) Describe the core Semantic Web Technologies with respect to its key four components. (5)

b) Evaluate the performance of a predictive engine in terms of accuracy, precision, recall, f-measure, error, whose entries in the confusion matrix are: (5)

n=200	Predicted: NO	Predicted: YES
Actual : NO	TN=60	FP=10
Actual: YES	FN=5	TP=125

Q6. a) Which techniques that have been defined in research for Contextual Information Retrieval on the Web? (5)

b) Write short-notes on any *two*: (2x2.5=5)

(i) Server-side Technologies.
(ii) Web Mining Taxonomy.
(iii) Advantages & Disadvantages of Cascading Style Sheets.
(iv) Types of Recommender Systems.

END

Total No of Pages :1
B.Tech
MID SEMESTER EXAMINATION
Time: 1.5

Roll No.....
Second Semester
(Sep 2018)
Maximum Marks: 30

Note: Attempt any five questions.

Distributed Computing Systems, CO 407

1. (a) What is the difference between distributed computing and parallel computing [3]
(b) Explain the three scaling techniques in detail with sufficient examples. [3]

2 (a) What is RPC? Explain the Synchronous and Asynchronous RPC ? How are they suitable for Distributed Systems? [3]
(b) What are issues for parameter passing in RPC? [3]

3 (a) What is a BitTorrent network? How is it a hybrid network? [3]
(b) How does IP assist in Quality of Service in Distributed Systems. [3]

4 (a) How is time synchronized using NTP protocol? [3]
(b) Explain any one technique for mutual authentication in distributed network? How is it different from mutual authentication on a single system? [3]

5(a) What are lamport logical clocks? How are they different from GPS-based time synchorization? [3]
(b) What are the different architecture styles in distributed systems? [3]

6(a) What are the differences between cluster and grid computing? ? [3]
(b) Explain the edge-server systems with the help of an example [3]

END

Total No of Pages 02 Roll No.....

BTech **Second Semester**

MID SEMESTER EXAMINATION **(Sep 2019)**

Time: 1.5 hours **Maximum Marks: 30**

CO 407 Distributed Computing Systems,

Note: Attempt all Questions, Assume suitable missing data

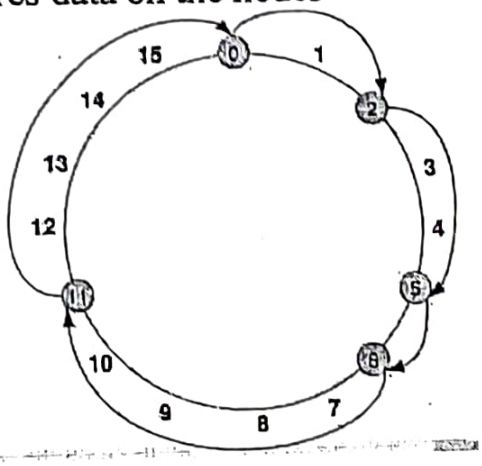
1. (a) What is a distributed system? What is the role of a middleware? How is it different from a parallel system? [3]
   (b) What are sensor networks and justify how they are part of distributed systems. [3]

2 (a) What are the requirements of scalability for distributed systems ? [3]
(b) Explain what is DNS and how it provides scalability with example? [3]

3 (a) Why must distributed applications use RPC? What are the challenges and advantages for RPC. [6]

4 (a) What are BitTorrent Systems? [3]
(b) What is a Application Multicast Tree? What are the metrics to create such a tree? [3]

5(a) Explain what is chord Peer to Peer system. For a chord Distributed system that shares data on the nodes



- H("Fatemeh") = 12
- H("Cosmin") = 2
- H("Self") = 9
- H("Sarunas") = 14
- H("Tallat") = 4

Shaded nodes are active in the Chord logical ring. If the files have the above hashes generated from the DHT how will the files be stored on the nodes? [3]

(b) What is an endpoint address in a Berkley socket ? What sequence of calls will be initiated to create a TCP connection using Berkeley sockets on client and server? Why is TCP connection oriented? [3]

Total No of Pages 01 Roll No.....

BTech **Seventh Semester**

END SEMESTER EXAMINATION (Nov-Dec 2019)

Distributed Computing Systems, CO - 407

Time: 3 hours Maximum Marks: 40

Note: Attempt all Questions, Assume suitable missing data. Attempt all parts in sequence. Option available only in Question 6.

1. i) What are the different methods for reliable multicast communication for Fault Tolerance for flat group of processes?
ii) Discuss Cluster based File system with example. [6]

2i) Discuss Monotonic Reads and Monotonic Writes with example
ii) Discuss various methods for Replication Placement. [6]

3 Explain Primary Based Remote Write Protocol with examples. [6]

4i) Discuss decentralized Mutual Exclusion Algorithm with example.
ii) How is election held in wireless sensor networks. [6]

5i) What are the different types of failures in Distributed Systems. What are the mechanisms to hide failures?
ii) What do you understand by architecture styles? Explain different types of architectural styles for distributed systems with diagram. [6]

6. What is Three Phase Distributed Commit? What are its advantages over one phase and two phase commit? [10]

OR

What are Message Queues and how is communication done in Distributed Systems? [10]

1 – 169 –

Total No of Pages 01 Roll No.....

BTech **Seventh Semester**

END SEMESTER EXAMINATION (Nov-Dec 2019)

Distributed Computing Systems, CO - 4031

Time: 3 hours **Maximum Marks: 70**

Note: Attempt all Questions, Assume suitable missing data. Attempt all parts in sequence.

1. i) What is the requirement for transparency in distributed systems?
ii) How is RPC used for communication in Distributed Systems and what are the challenges for RPC? [14]

2i) Why is clock synchronization required for distributed system? Explain any two methods for clock synchronization.
ii) Explain how distributed mutual exclusion can help in resource sharing [14]

3 i) Explain what is data centric consistency model. Discuss any two model for data centric consistency.
ii) How can the replicas be placed in distributed systems? [14]

4i) What are the different types of faults in a distributed system and how they can be overcome?
ii) Explain any one method for holding election in a distributed system along with an example. [14]

5. Explain Two phase commit in distributed systems with neat state diagrams. What are the various cases the coordinator and participants can recover if they are blocked in a particular state? [14]

Total No. of Pages (1) *Roll No.....*

7th SEMESTER **B.Tech. (Computer Engineering)**

END SEMESTER EXAMINATION **(Nov/Dec- 2018)**

CO407, Distributed System,

Time: 3.00 Hours **Max. Marks: 40**

Note: Attempt any 5 Questions, Assume suitable missing data. Draw diagram where relevant. Attempt all parts together.

1. i) What the different methods for reliable multicast communication for Fault Tolerance for non-hierarchical process model?
ii) What is Two Phase Distributed Commit? What are its disadvantages and what are the alternatives? [8]

2 i) What are the different client centric consistency models? Explain any four with example.
ii) Discuss various methods for Replication Placement. [8]

3 Explain the Primary Based Consistency Protocols with examples and diagrams. [8]

4i) How do we use virtualization in Distributed Systems Explain with suitable example or diagram.
ii) How is election held in wireless sensor networks. [8]

5i) What are the different types of Faults in Distributed Systems. How are they handled?
ii) Why is Access control important for distributed systems?. Ellaborate on any four techniques. [8]

6i) What is message queue model in Distributed systems? How is it different from TCP/IP networking?
ii) What are Active Replication models in Distributed Systems ? Compare them with examples. [8]

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-267-

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Total No. of Pages (1) *Roll No.....*

7th SEMESTER B.Tech. (Computer Engineering)

END SEMESTER EXAMINATION (Nov 2018)

Distributed System, CO – 4031

Time: 3.00 Hours **Max. Marks: 70**

Note: Attempt any 5 Questions, Assume suitable missing data. Draw diagram where relevant. Attempt all parts together.

1. i) Explain the issue of transparency in Distributed System in detail?
ii) What are sensor networks in Distributed System?. Explain with an example. [14]

2i) What are the different data centric consistency models? Explain any four with example.
ii) What is RPC? What are the issues with RPC? [14]

3 i) What are the architectural styles in distributed system?
ii) What is centralized mutual authentication in distributed system? [14]

4i) What is bully election algorithm. Discuss with suitable a diagram.
ii) Explain the difference between NTP and GPS based time synchronization methods. [14]

5i) What are the different types of Faults in Distributed Systems. How are they handled?
ii) What are the different encryption schemes that can ensure confidentiality in distributed systems? Explain any one in detail. [14]

6i) What is BitTorrent file sharing systems?
ii) What is scalability in Distributed systems? [14]

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-261-

Total No. of Pages (1) *Roll No.....*

7th SEMESTER **B.Tech. (Computer Engineering)**

END SEMESTER EXAMINATION **(Nov/Dec- 2018)**

CO407, Distributed System,

Time: 3.00 Hours **Max. Marks: 40**

Note: Attempt any 5 Questions, Assume suitable missing data. Draw diagram where relevant. Attempt all parts together.

1. i) What the different methods for reliable multicast communication for Fault Tolerance for non-hierarchical process model?
ii) What is Two Phase Distributed Commit? What are its disadvantages and what are the alternatives? [8]

2 i) What are the different client centric consistency models? Explain any four with example.
ii) Discuss various methods for Replication Placement. [8]

3 Explain the Primary Based Consistency Protocols with examples and diagrams. [8]

4i) How do we use virtualization in Distributed Systems Explain with suitable example or diagram.
ii) How is election held in wireless sensor networks. [8]

5i) What are the different types of Faults in Distributed Systems. How are they handled?
ii) Why is Access control important for distributed systems?. Ellaborate on any four techniques. [8]

6i) What is message queue model in Distributed systems? How is it different from TCP/IP networking?
ii) What are Active Replication models in Distributed Systems ? Compare them with examples. [8]

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-170-

Total No. of Pages: 02 Roll No.....

SEVENTH SEMESTER **B.TECH.[CO]**

END SEMESTER EXAMINATION, *November*- 2019

CO-4043 DIGITAL IMAGE PROCESSING

Time: 3:00 Hours **Max. Marks: 70**

Note: Answer *Any FIVE* questions.
Assume suitable missing data, if any.
Answer all the questions using **optimum** number of words.

1[a] What is meant by contrast of an image? Suggest a transfer function to increase the contrast. [7]

[b] Perform histogram equalization for 3-bit gray image of the size 8X8 given in Table I. [7]

Table I

Gray levels	0	1	2	3	4	5	6	7
Number of pixels	14	5	8	10	4	16	12	2

2[a] Describe the mathematical model of noisy image (with additive noise). Also, give the Gaussian noise distribution formulation for gray digital images. Also, justify that mean filter would reduce Gaussian noise. [7]

[b] Design a filter for sharpening of how of a grey image. Also discuss the effect of the sharpening filter in contrast of an image. [7]

3[a] Describe the HSV color model for digital image and give appropriate mathematical expressions. Is there any difference between gray image and V component of same image? [7]

[b] Define fuzzy logic and compare with classical logic. Also define INTERSECTION operation of two fuzzy sets. [7]

4[a] Define Coding Redundancy. Also, explain the functional blocks of a general compression system. [7]

[b] Prove the following relation for erosion and dilation. (Symbols have usual meaning) [7]

$$(A \oplus B)^c = A^c \Theta \hat{B}$$

5[a] Give definitions of first order and second order derivative of images. Also explain, how they are used for edge-detection? [7]

[b] Describe the maximal suppression method used in the Canny edge detector. [7]

6. Write short notes on any FOUR of the followings: **[3.5x4=14]**

[a] Dilation and Erosion

[b] Inverse filtering

[c] Prewitt and Sobel operators

[d] Region growing segmentation

[e] High boost filtering

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Total No. of Pages: 03 Roll No.....

THIRD SEMESTER B.Tech. [MCE]

END SEMESTER EXAMINATION Nov-2019

CS 251 DATA STRUCTURES

Time: 3:00 Hours **Max. Marks : 40**

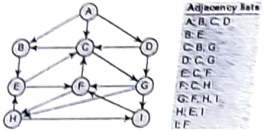
Note : All questions carry equal marks. Answer SIX questions.
Question no. 1 is compulsory.
Assume suitable missing data, if any.

Q1. Answer the following questions: **[10]**

a) Differentiate between strictly binary tree and complete binary tree.

b) The keys 12, 18, 13, 2, 3, 23, 5 and 15 are inserted into an initially empty hash table of length 10 using open addressing with hash function h(k)= k mod 10 and linear probing. Explain and illustrate the resulting hash table?

c) Consider the given graph. The adjacency list of the graph is also given. Print all the nodes that can be reached from the node H (using H itself) using Depth-First Search with the help of a stack.



Adjacency lists
A: B, C, D
B: E
C: B, G
D: C, G
E: C, F
F: C, H
G: F, H, I
H: E, I
I: F

d) Sort the given array using merge sort

39	9	81	45	90	27	72	18

e) Consider a hash table with 100 slots. Collisions are resolved using Chaining. Assuming simple uniform hashing, what is the probability that the first 3 slots are unfilled after the first 3 insertions? Explain with the help of an example.

Q2. **[2 x 3]**

a) Write algorithms for push and pop to implement *m* multiple stacks in a single 1-D array.

b) Given an array of elements, write an algorithm to replace every element with nearest greater element on the right of that element.

Q3. **[2 x 3]**

a) Consider the graph in Figure 1. If we start with node 10 as the starting node and use Prim's algorithm to construct the minimum spanning tree, give the order in which nodes will be accessed. Also, give the minimum total weight.

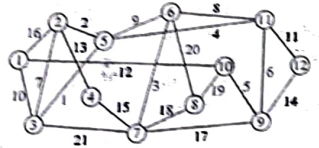
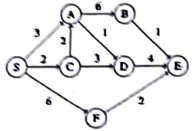


Figure 1

b) Write an algorithm to perform BFS and DFS on a graph.

Q4. **[2 x 3]**

a) Consider the given graph. Taking *S* as the initial node, execute Dijkstra's algorithm on it and illustrate the resultant graph.



b) Stepwise sort the given array [5, 6, 11, 4, 14, 12, 2] using Heap sort.

Q5. **[2 x 3]**

a) Given a stack of integers, write a pseudocode to check whether each successive pair of numbers in the stack is consecutive or not. The pairs can be increasing or decreasing, and if the stack has an odd number of elements, the element at the top is left out of a pair. For example, if the stack of elements are [4, 5, -2, -3, 11, 10, 5, 6, 20 (top)], then the output should be true because each of the pairs (4,5), (-2,-3), (11,10), and (5,6) consists of consecutive numbers.

b) Given an integer k and a queue of integers, write a program to reverse the order of the first k of the queue, leaving the other elements in the same relative order. For example, if $k = 4$ and queue has the elements [10, 20, 30, 40, 50, 60, 70, 80, 90], the output should be [40, 30, 20, 10, 50, 60, 70, 80, 90].

Q6. **[2 x 3]**

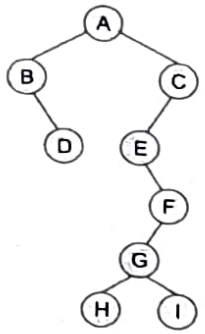
a) Write an algorithm to implement Insertion sort. Also, perform Insertion sort on the given set of data items:

4	75	74	2	54

b) Consider a hash table of size m=9. The hash function h(k)= k mod m is used and all the collisions are resolved by chaining. The following keys are inserted in the order: 5, 28, 19, 15, 20, 33, 12, 17, 10. Illustrate and explain what are the maximum, minimum and average chain lengths in the resultant hash table.

Q7. **[2 x 3]**

a) Perform In-order, Pre-order and Post-order traversal on the given graph:



b) Construct an AVL tree by inserting the following elements in the given order: 63, 9, 19, 27, 18, 108, 99, 81.

Q8. **[2 x 3]**

a) Write a C program to add a node with data "X" before a node with data "Y" in a singly linked list. Explain with the help of an example.

b) Write an algorithm to perform Union and Intersection on 2 sorted linked lists.

Total No. of Pages :03 Roll No. .....

4th SEMESTER – VII B.Tech. [SE]

END TERM EXAMINATION *Nov-2018*

SE405 SOFTWARE PROJECT MANAGEMENT

Time: 3:00 Hours *Max. Marks: 40*

Note: Q. No. 1 is compulsory. Answer any FIVE questions.
Assume suitable missing data, if any.

Q.1 Answer all the following questions:

[a] Briefly tell the role of Pair programming and refactoring in extreme programming. [2]

[b] FPA functional units can be divided into two categories. What are those categories? [2]

[c] State any two advantages and disadvantages of COCOMO. [2]

[d] Explain the need for risk monitoring. [2]

[e] Is there any need of doing postmortem analysis? Justify your answer. [2]

[f] What is Activity-on-Arrow(AOA)? [2]

Q.2 Answer all the following questions:

[a] Explain the significance of different project management activities.[3]

[b] Compare and contrast spiral model, iterative enhancement model and prototyping model for software development life cycle. [4]

Q.3 Answer all the following questions:

[a] How do you count internal classes, external classes and services in object oriented function point? [3]

[b] Consider the university registration system which has 06 actors and 15 use cases. Compute the use case point for the system. Assume all complexity factors are average, [4]

Q.4 Answer all the following questions:

[a] A project manager is relegated to a venture ahead of schedule in the venture lifecycle. Something that must be done is to do a justification for the project. Since very little information is known about the project, the

estimates are considered to be rough estimates. The accompanying table is the project manager's gauge of the income that will occur throughout the following five years:

End of Year	Project A (in Rs.)
1	-70000
2	10000
3	25000
4	42000
5	30000

Calculate the net present value using discount rate of 10% and 15%. [3]

[b] Identify and explain the different categories/applications and stages of COCOMO-II. [4]

Q.5 Answer all the following questions:

[a] Design the SRS Document checklist for the employee management system. [3]

[b] Elaborate the steps in Fagan Inspection. Discuss the role of different participants in software inspection. [4]

Q.6 Answer all the following questions:

[a] For the parking management system, some risks were identified with their impact and probability of occurrence and recorded in risk table given below. Form the Risk matrix ranking them as low, medium, high or urgent risks.

S.No.	Probability of occurrence of problem	Impact of problem
R1	7	3
R2	9	2
R3	2	7
R4	6	8
R5	4	5

[3]

[b] In a project, manager is facing technical difficulty in development with unrealistic cost and time estimates. Requirements are also changing late in project. Can you suggest some risk reduction strategies that the manager should follow to overcome these issues? [4]

Q.7 Answer all the following questions:

[a] For the following information of table

Activity	Predecessor	Duration(in weeks)
A	-	2
B	-	3
C	A	7
D	B	4
E	C, D	2
F	E	6
G	C	4
H	F,G	3

Draw the network diagram and find the critical path(s). [3]

[b] How can one compute

(i) total estimated time for an activity and

(ii) the probability of meeting the target duration of the project using PERT technique. Explain with suitable example. [4]

END

Total No. of Pages :02

7th SEMESTER **B.Tech.[SE]**

MID TERM EXAMINATION ***Sept-2019***

SE405 SOFTWARE PROJECT MANAGEMENT

Time: 1.5 hrs *Max. Marks: 30*

Note: Assume suitable missing data, if any.

Q.1 The special purpose vehicle company, Metro Link Express for Gandhinagar and Ahmedabad (MEGA) Company Ltd (now renamed Gujarat Metro Rail Corporation (GMRC)), was established by Government of Gujarat on 4 February 2010 with Rs 200 crore. Later in 2014, it was decided that the Central Government will own 50% of the company. On 19 October 2014, Union Cabinet of India approved ₹10,773 Crores for the Phase–1. In 2015 budget of Gujarat, ₹ 611 crore was further allocated for the metro. The Government of Gujarat gave approval for Phase-2 of project in October 2017 and revised it in October 2018. In February 2019, the Union cabinet approved the Rs 5384.17 crore for second phase of the project.

Phase-1 (under construction)

- Total Length: 40.03 km (24.87 mi)
  - North-South corridor: 18.87 km (11.73 mi)
  - East-West corridor: 21.16 km (13.15 mi)
- Elevation:
  - Elevated: 33.50 km (20.82 mi)
  - Underground: 6.53 km (4.06 mi)

Phase-2 (approved)

- Total length: 28.254 km (all elevated)
  - Motera-Mahatma Mandir corridor: 22.838 km
  - Gujarat National Law University (GNLU)-GIFT City corridor: 5.416 km

The project will connect four corners of Ahmedabad city with 2 corridors and 32 stations. North-South corridor will be completely elevated with 15 stations and will connect Motera Stadium to APMC, Vasna. East-West corridor will have 17 stations in route. In east-West corridor, approximately 6.5 km is underground section with four underground stations and rest is the elevated section with 13 elevated stations. The old high court station will be interchange for both the

corridors. Phase-1 is expected to be completed by 2020. In second phase, It will extend from Motera to Mahatma Mandir in Gandhinagar,(22.838 km) with a separate line from Gujarat National Law University (GNLU) linking Pandit Deendayal Petroleum University (PDPU) and GIFT City (5.416 km). The Phase-2 will have total 28.254 km long elevated corridor with 22 stations.

(a) Identify the scope of project. (01)

(b) List the objectives of project in order of their importance. (02)

(c) Is the project technically and/or economically feasible? Justify your opinion. (02)

(d) What will be the deliverables of this project? (02)

(e) Which lifecycle model will you recommend for this project? Also provide rough outline of all phases involved with respect to the project. (04)

(f) Identify all the stakeholders and define their responsibilities. (04)

Q.2 Briefly explain modes of COCOMO. Suppose a project is estimated for 150 KLOC. Project requires medium innovation and its schedule is also not very tight. Calculate average staff size and productivity of the project. (02+03=05)

Q.3 A software project has 2 internal classes- C1 with 4 DETs and 5 RETs, C2 with 2 DETs and 1RETs. It has 1 external class C3 also with 5 DETs and 10 RETs. Concrete services in the classes are 4 of average complexity. Assuming adjustment factors to be moderate, calculate object point for the system. (05)

Q.4 Consider the project cash flow estimates for 2 projects at ABC company pvt ltd. What do negative values and positive values represent? Rank the 2 projects in order of financial desirability on basis of NPV, using 10% discount rate. (05)

Year	Project 1	Project 2
0	-100000	-120000
1	10000	30000
2	10000	30000
3	10000	30000
4	20000	30000
5	100000	75000

Total No. of Pages: 02 ROll NO.....

7th SEMESTER B.Tech. [SE]

MID TERM EXAMINATION ***Sept-2018***

PAPER CODE: SE 405

PAPER TITLE: SOFTWARE PROJECT MANAGEMENT

Time: 1.5 hrs ***Max. Marks: 30***

Note: Assume suitable missing data, if any.

Q.1 [a] Compare the software characteristics with hardware characteristics. (02)

[b] Recognize the stakeholders for Airline Reservation System and explain their roles and responsibilities. (03)

Q.2 What are different rules that need to be followed in agile processes. Diagrammatically explain typical lifecycle of XP. (05)

Q.3 Compute use case point for an application, assuming that it has 5 average actors and 7 complex use cases. Treat all technical and environmental complexity factors as average. (05)

Q4. An application has 5 high external inputs, 10 low external outputs, 12 average internal logical files, 15 high external interface files and 20 average external inquiries. 10 complexity adjustment factors are moderate and remaining factors are significant. Calculate the unadjusted and adjusted function point counts? (05)

Q.5 A railway reservation system is to be built in JAVA language. Back-end database server has already been built. Application will have 3 screens and will produce 1 report. A booking screen records a new sale booking, a pricing screen shows the rate for each day and each flight, an availability screen shows available flights and a sales report shows total sale figures for the month and year, and compares figures with previous months and years. Booking screen needs 3 data tables (customer info, customer history table, available seats) and only 1 view of the screen is enough. The pricing screen, the availability screen requires 5 data tables and 4 views where as the sales report require 7 data tables and 5 sections. There is no 3GL component. Assessment of the developers and the environment shows that the developers' experience is very low and the CASE tool capability is

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low. There is 20% reuse of object point. Calculate the object point count, new object points and effort to develop such a project. (05)

Q.6 A project manager is relegated to a venture ahead of schedule in the venture lifecycle. Something that must be done is to do a justification for the project. Since very little information is known about the project, the estimates are considered to be rough estimates. The accompanying table is the project manager's gauge of the income that will occur throughout the following six years:

Year	Cash Flow In
0	-12000
1	5000
2	3000
3	4000
4	5000
5	2000
6	3500

(a) What is the payback period for this project? (01)
(b) Calculate the Return on Investment for the above project. (01)
(c) If the net present value for each of the cash flows were calculated at a 15% interest rate, then what will be the net present value cash flow at the end of five years? (03)

END