Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
Diploma Engineering – SEMESTER – 3 (NEW) – EXAMINATION – Winter-2022

Subject Code: 4331604   **Date: 03-03-2023**
Subject Name: Fundamentals of Software Development
Time: 02:30 PM TO 05:00 PM   **Total Marks: 70**
Instructions:
1. **Attempt all questions.**
2. **Make Suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use of programmable & Communication aids are strictly prohibited.**
5. **Use of non-programmable scientific calculator is permitted.**
6. **English version is authentic..**

Q.1	**(a)**	Justify: Spiral model can be viewed as meta model.	**03**
	(અ)	વિધાન સમજાવો : Spiral model ને meta model તરીકે જોઈ શકાય છે.	
	(b)		**04**
		(i) Define: Software ,Software Engineering	02
		(ii) Discuss any Four Software Myths.	02
	(બ)		
		(i) સોફ્ટવેર, સોફ્ટવેર એન્જિનિયરિંગ ની વ્યાખ્યા આપો.	
		(ii) સોફ્ટવેર ની કોઈપણ ચાર ગેરમાન્યાતાઓ સમજાવો.	
	(c)	Explain Classical Waterfall model in detail.	**07**
	(ક)	Classical Waterfall model વિગતવાર સમજાવો.	

OR

	(c)	Explain Agile Process and Principles.	**07**
	(ક)	Agile Process and Principles વિગતવાર સમજાવો.	
Q.2	**(a)**	List out any three advantages of Scrum model.	**03**
	(અ)	Scrum model ના કોઈપણ ત્રણ ફાયદાઓ લખો.	
	(b)	Discuss functional requirements for ATM banking system.	**04**
	(બ)	ATM banking system ની functional requirements સમજાવો.	
	(c)		**07**
		(i) Define SRS. Explain characteristics of Good SRS.	04
		(ii)Write importance of SRS.	03
	(ક)		
		(i)SRS ની વ્યાખ્યા આપો. Good SRS ની લાક્ષણિકતા સમજાવો.	
		(ii)SRS નું મહત્વ લખો.	

OR

Q.2	**(a)**	Full Form of: SDLC,XP Model, RAD	**03**
	(અ)	ફુલ ફોર્મ : SDLC,XP Model, RAD	
	(b)	Discuss Functional requirements for Online Ticket Booking system for multiplex.	**04**
	(બ)	Online Ticket Booking system for multiplex ની functional requirements સમજાવો.	
	(c)		**07**
		(i) Compare: Functional Requirements v/s Non-Functional Requirements.	04
		(ii)List out Activities for Requirements Gathering.	03

(ક)
(i)Functional Requirements and Non-Functional Requirements વચ્ચેનો તફાવત આપો.
(ii) Requirements Gathering માટેની Activities લખો.

Q.3 **(a)** Compare: Traditional Model Approach v/s Agile Approach   **03**
(અ) Traditional Model Approach v/s Agile Approach વચ્ચેનો તફાવત આપો.
(b) Compare: PERT & CPM   **04**
(બ) PERT & CPM વચ્ચેનો તફાવત આપો.
(c) Find Critical Path for below the Air pollution control system having different activities listed below.   **07**

Activity	Description	Time	Immediate Predecessor
A	Build internal components	2	None
B	Modify roof and floor	3	None
C	Construct collection stack	2	A
D	Pour concrete and install frame	4	B
E	Build high temperature burner	4	C
F	Install control system	3	C
G	Install air pollution device	5	D,E
H	Inspection and Testing	2	F,G

(ક) Air pollution control system માટેની different activities નીચે આપેલ છે,જેનો Critical Path શોધો.

Activity	Description	Time	Immediate Predecessor
A	Build internal components	2	None
B	Modify roof and floor	3	None
C	Construct collection stack	2	A
D	Pour concrete and install frame	4	B
E	Build high temperature burner	4	C
F	Install control system	3	C
G	Install air pollution device	5	D,E
H	Inspection and Testing	2	F,G

OR

Q.3 **(a)** State the importance of Agile Development.   **03**
(અ) Agile Development નુ મહત્વ લખો.
(b) Write in brief: Responsibilities and skills of software Project Manager.   **04**
(બ) Responsibilities and skills of software Project Manager વર્ણવો.

07

(c) Find Critical Path for following System.

Activity	Description	Immediate Predecessor	Time
A	Project start	None	0
B	Buy materials for A	A	10
C	Buy materials for B	A	20

D	Build A	B,C	30
E	Build B	C,C	20
F	Polish and finish B	E	40
G	Join A and B	D,F	20
H	Project finish	G	0

(ક) નીચે આપેલ સિસ્ટમ માટે Critical Path શોધો.

Activity	Description	Immediate Predecessor	Time
A	Project start	None	0
B	Buy materials for A	A	10
C	Buy materials for B	A	20
D	Build A	B,C	30
E	Build B	C,C	20
F	Polish and finish B	E	40
G	Join A and B	D,F	20
H	Project finish	G	0

Q.4 **(a)** Define Risk. List Out important categories of risks that can affect a software development. **03**

(અ) Risk ની વ્યાખ્યા આપો.રિસ્કના મહત્વના પ્રકાર જે સોફ્ટવેર ડેવલોપમેન્ટને અસર કરે છે તે લખો.

(b) Justify: High Cohesion and Low coupling is good for any software design. **04**

(બ) વિધાન સમજાવો: High Cohesion અને Low coupling સોફ્ટવેર ડિઝાઇન માટે સારું છે.

(c) Draw DFD Level-0(Context) diagram for following Problem statement. **07**
(I) Online Library Management System

(ક) DFD Level-0(Context) diagram નીચે આપેલ Problem statement માટે દોરો.
(I) Online Library Management System

OR

Q.4 **(a)** Full form of: WBS,PMC,PERT **03**

(અ) ફુલ ફોર્મ : WBS,PMC,PERT

(b) Explain Graphical User Interface. **04**

(બ) Graphical User Interface સમજાવો.

(c) Draw Use Case diagram for following problem statement. **07**
(I)Online Food Order & Delivery System.

(ક) Use Case diagram નીચે આપેલ Problem statement માટે દોરો.
(I)Online Food Order & Delivery System.

Q.5 **(a)** List out any three Coding Guidelines. **03**

(અ) કોઇપણ ત્રણ Coding Guidelines લખો.

(b) Define Following Terms: (i)FORK (ii) MERGE **04**

(બ) આપેલ ટર્મ સમજાવો: (i)FORK(ii)MERGE

(c) Define Test case. Write test cases for finding GCD of two numbers with suitable example. **07**

(ક) Test case સમજાવો.બે નંબર વ્યચેનો ગુરુત્તમ સામાન્ય અવ્યવ શોધવા માટેના test cases યોગ્ય example સાથે લખો.

OR

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Q.5 **(a)** Write characteristics of Good Coding. **03**

(અ) Good Coding ની લાક્ષણિકતા લખો.

(b) List out characteristics of Good User Interface. **04**

(બ) Good User Interface માટેની લાક્ષણિકતા લખો.

(c) Define Test suite. Write test cases to check whether number is even or odd with suitable example. **07**

(ક) Test suite સમજાવો. નંબર એકી છે કે બેકી તે શોધવા માટેના test cases યોગ્ય example સાથે લખો.

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