LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

APRIL - 2021 SEMESTER EXAMINATIONS

II SEMESTER – M.Sc., COMPUTER SCIENCE

Paper Code : **20PFE2C** Title of the Paper : **Elective - Software Project Management**

DATE **: 26.06.2021 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. What is SPM?
2. Define Project.
3. What is Cost-benefit analysis?
4. What is Risk evaluation?
5. Define Sequencing.
6. Define Scheduling.
7. What are the levels of Prioritizing Monitoring?
8. What is the form of agreement in Contract Management?
9. What are the types of Motivation?
10. Define Stress.
11. What is a hazard?
12. List the different types of Contract.

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Explain Contract Management.
14. Discuss the Cash flow techniques in Project development.
15. Explain the importance of forward pass in calculating the earliest dates with an example.
16. What are the different types of Visualizing Progress explain in detail?
17. Discuss leadership models. Explain function of a leader with an example.
18. How are hazards identified and analyzed?
19. Explain in detail about decision making with an example.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Give an outline of stepwise planning activities for a project with a neat diagram.
21. Explain the use of decision trees in risk evaluation.
22. Briefly explain the steps involved in risk planning in project development.
23. Explain the different stages in Contract Placement.
24. Explain the Oldham-hackman job characteristic model.

E-Mail Id for Uploading Answer Sheet

csdepartment@lngovernmentcollege.com

LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

APRIL - 2021 SEMESTER EXAMINATIONS

II SEMESTER – M.Sc., COMPUTER SCIENCE

Paper Code : **20PFE2D** Title of the Paper : **Elective - Advanced Computer Networks**

DATE **: 28.06.2021 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. What do you mean by Physical layer?
2. List the various Unguided Media used for Transmission.
3. What is CRC?
4. What is a Multiplexing?
5. What is Internet?
6. Define Multiple Access protocols.
7. List out any three Routing algorithms.
8. What is IP Address?
9. Define Transport layer.
10. What is Addressing?
11. What is TCP/IP Network?
12. What is Correction?

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Explain about the Network hardware.
14. Discuss about the communication satellites.
15. Describe about the Medium access layer.
16. Explain about the congestion control algorithms.
17. What are the functions of the transport layer?
18. Discuss the crossbar switching.
19. Write short notes on Error Detection.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Explain in detail the structure and functions of OSI model?
21. Explain about the Telephones structures.
22. Describe in detail Data link layer in the internet.
23. Explain about Routing algorithms.
24. Discuss about the Connection Management.

E-Mail Id for Uploading Answer Sheet

csdepartment@lngovernmentcollege.com

LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

APRIL - 2021 SEMESTER EXAMINATIONS

II SEMESTER – M.Sc., COMPUTER SCIENCE

Paper Code : **20PFM2A** Title of the Paper : **Distributed Operating System**

DATE **: 23.06.2021 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. What is Distributed Computing System?
2. Define Computer Network.
3. Expand ATM.
4. What is Synchronization?
5. What is Buffering?
6. What is Deadlock?
7. What do you understand by Mutual Exclusion.
8. Define Thrashing.
9. What is Distributed File System?
10. Define the term File caching.
11. What is Cryptography?
12. Define Active Attack.

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Discuss about LAN and WAN.
14. Bring out the issues in PC message passing.
15. Discuss about the Structure of Shared memory.
16. Briefly discuss about Heterogenous DSM.
17. Explain the basic concepts of Atomic Transactions.
18. Discuss about Digital Signature.
19. What do you understand by Authentication? Discuss.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Explain the Distributed Computing System Models.
21. Discuss in detail about Failure handling in message passing.
22. Explain Election Algorithm in detail.
23. Discuss in detail about File accessing models.
24. What are the possible potential attacks to computer system? Discuss.

E-Mail Id for Uploading Answer Sheet

csdepartment@lngovernmentcollege.com

LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

APRIL - 2021 SEMESTER EXAMINATIONS

II SEMESTER – M.Sc., COMPUTER SCIENCE

Paper Code : **20PFM2B** Title of the Paper : **Programming in Python**

DATE **: 24.06.2021 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. List out the features of Python Programming.
2. Define Variable. Write the syntax for defining variable.
3. Differentiate Lists and Tuples.
4. What is lambda function?
5. What is the difference between MySQL and SQL?
6. What are four different methods (modes) for opening a file?
7. What is GTK?
8. What are the purposes of SOAP?
9. What is numpy in python?
10. Define the version controller system.
11. Write short note on text handling.
12. What are pandas in python?

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Explain the different types of operator in python.
14. Briefly explain the String Manipulations with suitable example.
15. Discuss the various object oriented concept.
16. Briefly explain various socket modules.
17. Explain the numerical operations on numpy arrays.
18. Discuss with syntax and example in Exception handling.
19. What is data exploration and data munging? Explain.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Discuss the Control statements in python.
21. Explain the different types of function.
22. Describe the creating database table to insert, update and read operation.
23. Explain developing GUI application using PyGTK.
24. Discuss about the Data frames and reading and writing data.

E-Mail Id for Uploading Answer Sheet

csdepartment@lngovernmentcollege.com

LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

APRIL - 2021 SEMESTER EXAMINATIONS

II SEMESTER – M.Sc., COMPUTER SCIENCE

Paper Code : **20PFM2C** Title of the Paper : **Internet of Things**

DATE **: 25.06.2021 FN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. Define the term "IoT".
2. What is physical design of IoT?
3. Mention the enabling technologies of IoT.
4. What do you mean by M2M?
5. Write down the functions of RFID.
6. Define: "SCADA".
7. Write a note on Raspberry PI.
8. List out the physical devices of IoT.
9. What is the use of cloud for IoT?
10. Define: "Data Analytics".
11. What do you mean by smart grid?
12. What is an asset management?

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Summarize the logical design of IoT.
14. Draw and explain the IETF architecture for IoT.
15. What are the requirements of network operator? Explain.
16. Distinguish between the IoT and M2M.
17. Elaborate the ten steps in IoT design methodology.
18. Describe the cloud storage model and communication APIs.
19. Explain the real world design constraints.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Draw and explain the architecture of Open Geospatial Consortium.
21. Illustrate the implementation of IEEE 802.15.4 and security.
22. Discuss the programming Raspberry PI with python.
23. Explain the Amazon web services for IoT.
24. Outline the commercial building automation and smart cities.

E-Mail Id for Uploading Answer Sheet

csdepartment@lngovernmentcollege.com

LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

APRIL - 2021 SEMESTER EXAMINATIONS

I SEMESTER – M.Sc., COMPUTER SCIENCE

Paper Code : **PFE1A** Title of the Paper : **Elective - Operations Research**

DATE **: 26.06.2021 AN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. Define: Operations Research.
2. What is a Slack Variables?
3. Define: Transportation Problem.
4. What is a Loop?
5. Define: Sequencing Problem.
6. What is an Assignment Problem?
7. What is a Competitive Game?
8. Define: Two Person zero sum Game.
9. Define: Network Scheduling.
10. What is a Critical Path?
11. Define: Total elapsed time.
12. What is a LPP?

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Determine an initial basic feasible solution to the following Transportation problem using north-west corner rule

	D_1	D_2	D_3	D_4		
O_1	6	4	1	5	**14**	
O_2	8	9	2	7	**16**	**Availability**
O_3	4	3	6	2	**5**	
	6	10	15	4	**35**	
	Requirements					

14. A Marketing Manager has 5 salesman an 5 sales districts. Considering the capabilities of the salesman an the nature of districts, the marketing manager estimates that sales per month (in hundred rupees) for each salesman in each district would be as follows.

Job	**Machine**				
	A	B	C	D	E
1	32	38	40	28	40
2	40	24	28	21	36
3	41	27	33	30	37
4	22	38	41	36	36
5	29	33	40	35	39

Find the assignment of salesman to districts that will result in maximum sales.

15. What are the Characteristics of OR? Explain in detail

16. Solve graphically Maximize $z = 3x_1 + 4x_2$

Subject to the constraints $4x_1 + 2x_2 \leq 80$,

$2x_1 + 5x_2 \leq 180$,

$x_1, x_2 \geq 0$

17. We have seven jobs each of which has to go through the machine M_1 an M_2 in the order M_1, M_2 .

Job :	1	2	3	4	5	6	7
Machine M_1:	3	12	15	6	10	11	9
Machine M_2:	8	10	10	6	12	1	3

Determine a sequence of these jobs that will minimize the total elapsed time T.

18. Solve the two person zero sum game

		Player B	
		B1	B2
Player A	A1	-5	2
	A2	-7	-4

19. What are the advantages of Network?

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Use Simplex method to solve the following L.P.P

Maximize $Z = 7x_1+5x_2$

Subject to the constraints $x_1+2x_2 \leq 6$,

$4x_1 +3x_2 \leq 12$,

$x_1, x_2 \geq 0$

21. Use two-phase simplex method to

Minimize $z = 15/2\, x_1 - 3x_2$

Subject to the constraints $3x_1 - x_2 - x_3 \geq 3$,

$x_1 - x_2 + x_3 \geq 2$,

$x_1, x_2 \geq 0$

22. Determine the optimum basic feasible solution to the Transportation problem.

From	TO A	B	C	Availability
I	50	30	220	1
II	90	45	170	3
III	250	200	50	4
Requirement	4	2	2	

23. We have 4 jobs each of which has to go through the machines M_j, j=1,2…6 in the order M_1,….M_6

	Machines					
Job	M_1	M_2	M_3	M_4	M_5	M_6
A :	18	8	7	2	10	25
B :	17	6	9	6	8	19
C :	11	5	8	5	7	15
D :	20	4	3	4	8	12

Determine a sequence of these four jobs that minimizes the total elapsed time T.

24. A Project consists of a series of tasks labeled A,B,….H,I with the following relationships (w<x,y means x and y cannot start until w is completed. x,y<w means w cannot start until both x and y arecompleted) with this notation construct the network diagram having the following constraints : A<D,E; B,D<F;C<G;B<H;F,G<I .

Find also the minimum time of completion of the project, when the time (in days) of completion of each task is as follows:

Task:	A	B	C	D	E	F	G	H	I
Time:	23	8	20	16	24	18	19	4	10

E-Mail Id for Uploading Answer Sheet

csdepartment@lngovernmentcollege.com

LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

APRIL - 2021 SEMESTER EXAMINATIONS

III SEMESTER – M.Sc., COMPUTER SCIENCE

Paper Code : **PFE3H** Title of the Paper : **Elective- Principles of Compiler Design**

DATE **: 08.05.2021 AN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. What is Compiler?
2. Define the term "Lexical Analysis".
3. What is Parser?
4. What is token?
5. Write the function of SDT.
6. Define Parse tree.
7. Write the issues in design of code generator.
8. Expand DAG.
9. Define the term Intermediate code generation.
10. What do you understand by Error detection?
11. Define Lexical Error.
12. What is meant by Recovery?

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Discuss about Finite Automata.
14. List the properties of LR parser.
15. Explain about the symbol table and its organization.
16. What is code optimization? Explain about various types of optimizations.
17. Write short notes on Code generation.
18. Construct NFA equivalent to regular expression r = (a + b)* ab.
19. What is Peephole optimization? Briefly explain its characteristics.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Explain different phases of Compiler in detail.
21. Draw the structure of LR parser. Explain its functions.
22. Explain the Syntax directed translation with example.
23. What is the purpose of code optimization? Explain in detail loop optimization with example.
24. Discuss in detail about Error deduction and recovery.

E-Mail Id for Uploading Answer Sheet

csdepartment@lngovernmentcollege.com

LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

APRIL - 2021 SEMESTER EXAMINATIONS

I SEMESTER – M.Sc., COMPUTER SCIENCE

Paper Code : **PFM1E** Title of the Paper : **Advanced Web Programming**

DATE **: 24.06.2021 AN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. What is Extensible Markup Language (XML)?
2. What is the difference between XML and HTML?
3. What is CSS?
4. What is the purpose of CSS Box Model?
5. What is JQuery?
6. What are features of JQuery?
7. What is PHP?
8. What is a Session in PHP?
9. What is MySQL?
10. What are the technical features of MySQL?
11. List out font attributes in CSS.
12. What is namespace?

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Explain about Tree Structure in XML.
14. Explain about Text property in CSS.
15. What are Events in jQuery? Explain.
16. Explain various Data Types in PHP.
17. What are the different types loops in PHP? Explain.
18. How many TRIGGERS are allowed in MySql table? Explain.
19. Write short notes on cookies.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Discuss in detail about CSS List Properties.
21. Explain in detail about XML Elements.
22. Discuss in detail about jQuery Selectors.
23. Explain in detail about operators in PHP.
24. Describe about Connectors and APIs in Mysql.

E-Mail Id for Uploading Answer Sheet

csdepartment@lngovernmentcollege.com

LOGANATHA NARAYANASAMY GOVT. COLLEGE (Autonomous), PONNERI – 601 204

APRIL - 2021 SEMESTER EXAMINATIONS

III SEMESTER – M.Sc., COMPUTER SCIENCE

Paper Code : **PFM3D** Title of the Paper : **Advanced Software Engineering**

DATE **: 06.05.2021 AN** Time : **3 Hours** Maximum Marks : **75 Marks**

PART – A (10 X 2 = 20 Marks)

Answer any **TEN** Questions from the following

1. What is the difference between software engineering and system engineering?
2. List the fundamental activities that are common to all software process.
3. What are the event-driven control models? Explain
4. What is the use of CORBA?
5. What is CBSE?
6. What are the Benefits of software Reuse?
7. What are contradictions and ambiguities?
8. List some of the categories of risks.
9. Define metric.
10. Define software maintenance.
11. What mean by Real time system?
12. What is Critical system?

PART – B (5 X 5 = 25 Marks)

Answer any **FIVE** Questions from the following

13. Describe the four layers of S/W Engg.
14. Discuss about the spiral model of the software process.
15. Explain the state machine model with an example.
16. Discuss about the advantages and disadvantages of shared repository.
17. What are the characteristics of good design?
18. Write steps that required to perform statistical s/w quality assurance.
19. Discuss about some of the set of attributes that should be encompassed by effective software metrics.

PART – C (3 X 10 = 30 Marks)

Answer any **THREE** Questions from the following

20. Discuss about the functional and non-functional requirement.
21. With neat diagram explain clean- room S/W engineering approach.
22. Explain about software quality assurance.
23. Discuss in detail about the domain engineering.
24. What are reactive and proactive risk strategies?

E-Mail Id for Uploading Answer Sheet

csdepartment@lngovernmentcollege.com