Total No. of Printed Pages:2

SUBJECT CODE NO:- H-504
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-I)
Elective-I: Data Analytics with R
[OLD]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Questions no.1 and 6 are compulsory.
2. Attempt any two from the remaining in each section

Section - A

Q.1 Write short notes on (any two) 10

a) head () and tail ()
b) Objects in R
c) Cbind () and rbind ()

Q.2
a) The average no. of accidents at a level crossing every year is 5. Calculate the probability that there are exactly 3 accidents there this year. Perform poisson distribution. 08
b) Explain in detail about t-test, f- test, and chi- square test used in data analysis. 07

Q.3
a) Explain in detail various data import techniques used in R. 08
b) Explain in detail how to read and write a csv file. 07

Q.4
a) What is data visualization? List and brief on some basic plots used in visualization 08
b) What is data? Explain in detail about various types of data 07

Q.5
a) What is data wrangling? Brief on the techniques used in data wrangling. 08
b) Explain in detail about various components of processed data. 07

Section – B

Q.6 Write short notes on (any two) 10

a) Fuzzy c- means
b) Regression
c) Multiple R- squared

Q.7
a) Explain in detail Random forest with a suitable example. 08
b) What is Machine learning? Explain various Machine learning use- cases. 07

Q.8
a) What is c- means? Explain c-means in detail with pros and cons. 08
b) What is supervised learning? Explain in detail. 07

Q.9	a)	Explain in detail Decision Tree with suitable example.	08
	b)	Explain in detail about various categories of machine learning algorithms.	07
Q.10	a)	What is confusion matrix? Explain in detail with suitable example.	07
	b)	Briefly summarize terms such as Degree of Freedom and Residual.	08

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-505
FACULTY OF SCIENCE AND TECHNOLOGY
B.E.(CSE) (Sem-II)
Elective-II: Data Science
[Revised]

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B.: 1) Q. No.1 & Q. No. 6 are compulsory.
2) Solve any two questions from the remaining questions in each Section.

Section A

Q.1	a)	What is data science? Discuss on data science era.	05
	b)	Compare and contrast between business intelligence and Data science.	05
Q.2	a)	Explain various phases involved in data science life cycle.	08
	b)	Explain 1) Apriori algorithm 2) Market based analysis	07
Q.3	a)	What is the importance of recommendation engine? Explain it's working.	08
	b)	What is a recommender system? How it is built? Explain.	07
Q.4	a)	What is the importance of text mining? Explain its algorithms.	07
	b)	Explain 1) Sentiment analysis 2) Quantifying text	08
Q.5	Write short notes on the following (Any three)		15
	i)	Tools of data science	
	ii)	Types of Recommendation engine	
	iii)	Association rule mining	
	iv)	TF-IDF and beyond TF-IDF	

Section B

Q.6	What is time series data, explain different time series data components.		10
Q.7	a)	What is ARIMA model? How it is implemented for forecasting?	08
	b)	What is tableau? Explain how it is useful for data visualization.	07
Q.8	a)	What is deep learning? What are its applications? Explain biological neural networks.	08
	b)	What is the importance of neural network in deep learning? Explain how ANN model is built.	07
Q.9	a)	With respect to data visualization explain i) Data sources ii) Filters and charts	08
	b)	With suitable example explain reinforcement learning use cases.	07
Q.10	Write short notes on the following (Any three)		15
	i)	Exponential smoothing model	
	ii)	Histogram	
	iii)	Important terminologies of ANN	
	iv)	Deep learning challenges	

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-625

FACULTY OF SCINECE AND TECHNOLOGY

BE. (CSE) (Sem-I)

Principles of Compiler Design

[CGPA]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Q.1 & Q.6 is compulsory.
2. Attempt any two questions from the remaining questions in each section.

Section -A

Q.1 What is compiler? For the following statement write the output after every phase of compilation? 10

Q.2
a) Write a note on programming language basics. 08
b) Discuss the structure of LEX program to recognize letters, digits, white spaces & numbers. 07

Q.3
a) Consider the grammar given below 08

$$E \rightarrow E + T \mid T$$
$$T \rightarrow T * F \mid F$$
$$F \rightarrow (E) \mid Td$$

Construct LR parsing table for above grammar, give the moves of LR parser on id * id + id

b) Explain shift – reduce parser with example. 07

Q.4
a) Explain canonical collection of LR(0) items with suitable example. 08
b) Explain a stack implementation of a shift – reduce parser with example. 07

Q.5
a) Write a YACC program for simple desk calculator. 08
b) What is a left recursion? Explain the rules for removal of left recursion. 07

Section -B

Q.6 Write short note on global data flow analysis. 10

Q.7
a) Discuss about inherited attributes & synthesized attributer. 08
b) Write a note on 3- address code. 07

Q.8
a) Discuss various issues in design of code generation. 08
b) Discuss the algorithm for elimination of local sub- expression. 07

Q.9
a) Explain register allocation and assignments in detail. 08
b) What is symbol table? What are uses of symbol table? 07

Q.10
a) Write a note on loop unrolling and loop jamming. 08
b) Write a note on Peephole optimization. 07

Total No. of Printed Pages: 01

SUBJECT CODE NO:- H-633
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-I)
Object Oriented Software Modeling & Design
[CGPA]

[Time: Three Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N.B 1) Q. No. 1 & Q. No. 5 is compulsory.
2) Attempt any two questions from the remaining questions in each Section.
3) Assume suitable data, if any.

Section A

Q.1	Solve any two.		10
	a)	4 + 1 views of software architecture	
	b)	Explain small talk MVC?	
	c)	Why software is inherently complex?	
Q.2	a)	Explain CRC & How they useful to draw class diagram?	07
	b)	Explain software Architecture design method & notation? Explain UML as standard?	08
Q.3	a)	How activity diagram simplify is understand any system? Explain elements of activity diagram?	08
	b)	Explain the interaction diagram? Gives its important & features?	07
Q.4	a)	Draw & explain the use case diagram for ATM systems?	07
	b)	Draw & explain the class diagram for library management system?	08

Section B

Q.5	Solve any two		10
	a)	Explain user interface design with suitable example?	
	b)	Explain the catalog of design pattern?	
	c)	What is design pattern?	
Q.6	a)	Explain singleton design pattern?	07
	b)	Explain creational design patterns?	08
Q.7	a)	Explain intent, motivation, structure collaboration & consequences of Abstract factory?	08
	b)	Explain Adapter design pattern?	07
Q.8	a)	Explain chain of responsibility design patterns?	08
	b)	Explain intent, structures, consequence and any two implementations of command design pattern?	07

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-640
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-I)
Cloud Computing
[CGPA]

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B
1) Q.No.1 and Q.No.6 are compulsory.
2) Attempt any two questions from the remaining ineach section.

Section A

Q.1	Write short notes on: (Any two) a) SOA b) Storage virtualization c) Distributed computing		10
Q.2	a)	Define cloud computing? Explain in detail its service models, deployment models with its essential characteristics.	08
	b)	With a neat labeled diagram. Explain on detail mainframe architecture.	07
Q.3	a)	Explain software as a service in detail.	08
	b)	What is a data center? Explain in detail its IT components.	07
Q.4	a)	Define web service. Explain in detail SOAP & REST web service.	08
	b)	Explain in detail virtualization with respect to Hypervisors classify them.	07
Q.5	a)	Explain in detail storage as a service & mention its draw backs, benefits & characteristics.	08
	b)	What is platform as a service? Explain the user view of Google App Engine with suitable block schematic	07

Section B

Q.6	Write short notes on: (Any two) a) Oozie b) Key privacy concerns in detail c) Location awareness & its strategies.		10
Q.7	a)	With a neat labeled diagram. Explain the architecture of HDFS.	08
	b)	Explain in detail the Map Reduce Model with an example.	07

Q.8	a)	Explain the terminologies:- i) MEMS ii) Aspects of data security in cloud computing	08
	b)	Explain in detail infrastructure security at application level.	07
Q.9	a)	With a neat labeled diagram. Explain the process of wireless application protocol.	08
	b)	What is the impact of AWS in cloud computing? Explain Amazon EC2 & S3.	07
Q.10	a)	Explain the terminologies:- i) VM Security Issues ii) Disaster Recovery in cloud	08
	b)	Explain secure SDLC in detail.	07

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-655
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-I)
Elective-I Agile Methodology
[CGPA]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1) Question No.1 and 6 are compulsory.
2) Attempt any two questions from the remaining in each section

Section A

Q.1	a)	Define and Explain Ethics in agile team.	05
	b)	Explain the lean software development.	05
Q.2	a)	Differentiate between traditional S/W development and agile S/W development.	08
	b)	Explain the agile manifesto and principles.	07
Q.3	a)	Suggest the different issues for using SCRUM agile methodology for global or distributed software development project	08
	b)	Define product backlog. Why product backlog grooming and refinement is necessary.	07
Q.4	a)	Explain the SCRUM roles as product owner, scrum master and scrum team.	08
	b)	Explain burn down chart, sprint planning and retrospective of SCRUM teamwork.	07
Q.5	a)	Differentiate between FDD and TDD	08
	b)	What is the best agile methodology for a start-up business? Explain	07

Section B

Q.6	a)	Explain automation and automated build.	05
	b)	Explain in detail DevOps.	05
Q.7	a)	What are the agile software design principles? Explain any one principle in detail with example.	08
	b)	List and Explain refactoring techniques in detail.	07
Q.8	a)	Explain the impact of agile life cycle on agile testing.	08
	b)	Differentiate between agile testing and waterfall testing.	07
Q.9	a)	Explain in detail exploratory and regression testing.	08
	b)	Explain any on tool which support the agile tester.	07
Q.10	a)	Explain in detail agile rapid development technologies.	08
	b)	Explain issues while adopting agile in industry and explain the business benefits of agile to the industry.	07

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SUBJECT CODE NO:- H-656
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-I)
Elective-I Remote Sensing & Geographical Information Systems
[CGPA]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B 1) Question no 1 from section A & Question no.6 from section B are compulsory. From remaining questions solve any two questions in section A & B.

Section A

Q.1	a.	Write a note on active & passive remote sensing systems.	05
	b.	Write a note on basic elements of image interpretation.	05
Q.2	a.	Explain the role of remote sensing in environment management	07
	b.	Give an account on the historical development of remote sensing as a technology.	08
Q.3	a.	Define remote sensing & explain various stages of remote sensing system.	08
	b.	Differentiate between electromagnetic radiation & spectrum.	07
Q.4	a.	Discuss the various theories and laws governing Electro Magnetic Radiation. Explain with the help of a diagram the EMR spectrum.	08
	b.	Explain with examples the characteristic features of remote sensing sensors.	07
Q.5	a.	Explain various platforms used in remote sensing.	08
	b.	Explain the interaction of electromagnetic energy with Earth surface in terms of reflected, transmitted & absorbed energy.	07

Section B

Q.6		Write in detail about vector data analysis & raster data analysis.	10
Q.7	a.	Discuss in detail about supervised and unsupervised clarification.	08
	b.	Discuss various techniques used in digital image processing.	07
Q.8	a.	Describe the basic principles and elements of geographical information system.	08
	b.	What are the various types of aerial photograph? How are a photograph are interpreted.	07
Q.9	a.	Explain various types of data models used in GIS.	08
	b.	Discuss GIS data acquisition in detail.	07
Q.10	a.	Explain various components used for integration of satellite image.	08
	b.	What is meant by mapping? Explain the various types of mapping projections.	07

Examination Nov/Dec 2019

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SUBJECT CODE NO:- H-657
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-I)
Elective-I Internet of Things
[CGPA]

[Time: Three Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N.B 1)Question no. 1 and 6 are compulsory.
2) Attempt any two from the remaining in each Section.

Section A

Q.1 Write short notes on (any two) 10
a) ThingSpeak IOT platform
b) Message Queuing Telemetry Transport
c) Applications of Microcontroller

Q.2 a) Describe Internet of Things along with it's different applications. 08
b) Explain 6 LOW PAN IOT protocol. 07

Q.3 a) Explain different functional blocks of python programming for IOT Appl^{n}. 08
b) Brief on Web Socket for IOT. 07

Q.4 a) Explain one M2M IOT architecture with neat diagram. 08
b) Elaborate different Water Quality Sensors. 07

Q.5 a) Using Arduino or Raspberry pi programming write program for object detection using IR. Also draw the Interfacing diagram. 08
b) Differentiate cloud, Edge & fog computing. 07

Section B

Q.6 Write short notes on (any two) 10
a) Criteria for sensor selection
b) AutoBahn
c) Traffic Light System

Q.7 a) Write a socket program for exchanging Messages using TCP. 08
b) Explain WAMP (Web Application Messaging Protocol.) 07

Q.8 a) Draw block diagram &brief home automation. 08
b) Elaborate Amazon web services for IOT. 07

Q.9 a) Design & Explain a system which Serves Web Pages that responds to user input for IOT application. 08
b) What is cloud storage? Explain advantages of cloud storage. 07

Q.10 a) List & Explain criteria for actuator selection. 08
b) List functional & non-functional requirements & Draw use case diagram for home automation. 07

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-1189
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (CSE) (Sem-VII)
Network Security
[OLD]

[Time: Three Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N.B i) Q. No.1 and Q.6 are compulsory.
ii) Attempt any two from remaining from each section.

Q.1 Attempt any five. 10
a) Explain confidentiality and Integrity.
b) Explain the concept of security.
c) List various technique of substitution cipher.
d) What is stegnography?
e) What is transposition cipher?
f) What are the different cryptanalytic attacks.

Q.2 a) Draw & explain model for Network Security. 08
b) Explain symmetric key Cryptography? 07

Q.3 a) What are the different traditional Cipher? Explain one of them with example. 08
b) Explain Brute Force attack in Details. 07

Q.4 a) Explain modular arithmetic 08
b) Explain Text cover in stenography in details. 07

Q.5 a) Using ceasercipher encrypt the message “Good morning”. 08
b) Explain symmetric key Cryptography. 07

Q.6 Attempt any five 10
a) Define P box and types
b) Enlist key generation process
c) Define HASH function
d) Enlist various attacks on PSA
e) Define: Product Cipher
f) Enlist Components of Block cipher

Q.7 a) Differentiate between linear and non linear S-boxes. 08
b) Describe P-box, S-box and its component in details. 07

Q.8 a) Write short note on RSA. 08

	b)	Explain AES structure in details.	07
Q.9	a)	Explain DES structure in details.	08
	b)	Explain modern block cipher?	07
Q.10	a)	What is product Cipher. Explain it with example.	08
	b)	Explain Reverse Cipher in details.	07

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-1222
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (CSE) (Sem VII)
Software Testing & Quality Assurance
[OLD]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1) Q.No.1 and 6 are compulsory.
2) Solve any two from Q.No.2 to 5.
3) Solve any two from Q.No.7 to 10.

Section A

Q.1 Attempt any five from the following. 10
1) What is meant by software bug?
2) Define bug?
3) What is meant by accuracy?
4) What is meant by precision?
5) Define quality?
6) Define software testing?

Q.2 a) Explain in detail the cost of bugs. 07
b) Explain in detail Y2K bug. 08

Q.3 a) Describe in detail waterfall model. 07
b) Describe the concept of pesticide paradox. 08

Q.4 a) Write a short note on product specifications are never fail. 07
b) Explain in detail verification & validation. 08

Q.5 a) Explain in detail spiral model. 07
b) Write a short note on what makes a good software tester? 08

Section B

Q.6 Attempt any five from the following: 10
1) What is meant by loop testing?
2) Define test cases?
3) What is software review concept?
4) Define stubs?
5) What is stress tool?
6) What is load tools?

Q.7 a) Explain in detail equivalence partitioning. 07

	b)	Explain in detail formal technical reviews.	08
Q.8	a)	Explain in detail software quality assurance.	07
	b)	Explain in detail Boundary value analysis.	08
Q.9	a)	Describe the concept of Black box testing.	07
	b)	Describe the concept of semi-smart monkeys.	08
Q.10	a)	Explain in detail white box-testing.	07
	b)	Explain in detail SQA plan.	08

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-1257
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (CSE) (Sem-VII)
Mobile Application Development
[Old]

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B 1) Question No.1 & 6 are compulsory.
2) Attempt any two from remaining from each section.

SECTION – A

Q.1 Attempt any five 10
a) What is explicit intent?
b) What is service?
c) Enlist files contained in values folder.
d) What is content provider?
e) What is ADB?
f) What is NDK?

Q.2 a) Explain the steps which an App goes through before it is ready for installation. 08
b) Explain the elements of an Actron Bar. 07

Q.3 Explain various mechanism of data persistence and access in mobile apps. Highlight pro and cons of each mechanism. 15

Q.4 a) Illustrate benefits of AsyncTask over threads for implementation. 08
b) Explain the various methods of JSON Reader APL used parsing JSON Data. 07

Q.5 a) Write XML code to create horizontal rainbow. 08
b) Outline process for intent resolution. 07

SECTION – B

Q.6 Attempt any five. 10
a) Enlist two position sensor.
b) Enlist two video codecs.
c) Enlist two audio format.
d) What is ANR?
e) What is ppi?
f) Explain screen resolution.

Q.7 a) List and explain various media formats supported by android. 08
b) Explain media player.objects life cycle and its respective call back method. 07

Q.8	a)	Explain App testing landscape in detail.	08
	b)	Explain various mechanism to publish an app.	07
Q.9	a)	List down the do's and don'ts while using sensors in an app.	08
	b)	Explain purpose of motion, position and environment sensor with real life use case in each.	07
Q.10	a)	Explain white box and black box testing for an android app.	08
	b)	Define various media containers and their respective codec in detail.	07

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-1292
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (CSE) (Sem-VII)
Cloud Computing
[OLD]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1) Question no.1 and 6 are compulsory.
2) Attempt any two questions from remaining questions from each section.

Section A

Q.1 Attempt any FIVE. 10
a) Define: Cloud.
b) What is Grid Computing?
c) Collaboration is ……
d) What is an IaaS?
e) What is the use of SOA?
f) In Amazon EC2 EC is ……?
g) What is GAE?

Q.2
a) Write short note on AWS. 08
b) Explain PaaS with suitable example. 07

Q.3
a) Discuss the key characteristics of Cloud Computing. 08
b) Explain the disadvantages of Cloud Computing. 07

Q.4
a) Explain the IaaS Characteristics in detail. 08
b) Write a note on Salesforce.com service. 07

Q.5
a) What is Collaboration? Write the steps to create a Google form. 08
b) Explain the Event management process in detail. 07

Section B

Q.6 Attempt any FIVE. 10
a) What is VMM?
b) The long form of WINE (Software) is ……
c) What is KVM in Ubuntu?
d) What is Guest & Host OS?
e) Define: Hypervisor.
f) Use of Cinder is ……..
g) Which are the storage components in Openstack?

Q.7	a)	Write a short note on Keystone component of Openstack.	08
	b)	What is Virtualization? Explain the types.	07
Q.8	a)	Draw and explain the Glance & Nova service of Openstack.	08
	b)	Describe the Openstack terminologies.	07
Q.9	a)	Write the advantages & disadvantages of Virtualization.	08
	b)	What are the types of a Hypervisor? Explain the role.	07
Q.10	a)	Write a short note on Red Hat Storage Server.	08
	b)	Discuss the Deployment models of Openstack.	07

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-4004
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (CSE) (Sem-VII)
Artificial Neural Networks & Deep Learning
(Revised)

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B
1) Q.1 from section A and Q.6 from section B are compulsory.
2) From the remaining solve any TWO questions from each section.

Section A

Q.1 Solve any FIVE questions. 10
a) Draw biological neural network and explain how it works?
b) Differentiate between Artificial Neural Network and Biological Neural Network.
c) Draw and explain a perceptron and explain each entity in it.
d) List and explain different models of Neurons.
e) Define Artificial Intelligence. Where do you use it?
f) What is learning of Neural Network?

Q.2 a) Draw and explain a perceptron and explain how a perceptron learns? 07
b) What is supervised learning? Give an example and show calculations of error. 08

Q.3 a) What are Hopfield Network? Explain error performance in Hopfield Networks. 07

b) What is error back propagation Neural Network? Draw and explain how Error Back Propagation Neural Network could be used for Face Detection? 08

Q.4 a) What is Pattern Recognition? Explain how a Crab could be classified into male and female using pattern recognition? 07

b) With two examples explain Feed Forward Neural Networks. 08

Q.5 a) What are bidirectional associated memory? Discuss their stability issues. 07
b) Write short note on Error correction and Gradient Decent Rules in Neural Networks. 08

Section B

Q.6 Solve any FIVE questions. 10
a) What are Auto Encoders?
b) Explain what is an Image Net?
c) What are Recurrent Neural Networks?
d) Define sequence learning problem?
e) Explain how a neural network can be used to store information?
f) Explain meaning of Deep learning?

Q.7	a)	Write short note on Types of Autoencoders. Explain each in detail.	07
	b)	Explain with suitable example how a neural network could be used to detect a handwritten digit?	08
Q.8	a)	What are Convolutional Neural Networks (CNN)? Explain with suitable application of CNN.	07
	b)	Write short note on each a) ResNet b) GoogLeNet	08
Q.9	a)	Explain with example how to achieve dimensionality reduction using autoencoders?	07
	b)	Differentiate between Convolutional Neural Network and a Simple Feedforward Neural Network?	08
Q.10	a)	Define and explain how Recurrent Neural Network work?	07
	b)	Write short notes on each a) Long Short Term Memory b) Gated Recurrent units.	08

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SUBJECT CODE NO:- H-4011
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (C.S.E.) (Sem-VII)
Cryptography and Network Security
[Revised]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1) Q.1 from section A and Q.6 from section B are compulsory.
2) From the remaining solve any two questions from each section.

Section A

Q.1 Solve any five questions 10

a) Apply additive cipher with key 15 to decrypt the message 'WTAAB'
b) Define availability as a principle of security
c) State difference between block cipher and stream cipher.
d) Define transposition cipher technique.
e) The minimum positive integer p such that 3p modulo 17 = 1 is_____
f) Draw network security model.
g) Define the concept modular arithmetic in cryptography

Q.2
a) Explain symmetric key cryptography 07
b) Differentiate between passive attack and active attack 08

Q.3
a) Rohit want to send message "Come home tomorrow". How to encrypt and decrypt the given message using Rail Fence technique 07
b) How substitution and transposition cipher work and how to differentiate both? Give appropriate example. 08

Q.4
a) What is the difference between DES and 3DES? Explain the working of 3DES encryption algorithm. 07
b) Differentiate between symmetric and asymmetric key cryptography 08

Q.5
a) Eve wants to send message "CAT". How will Eve encrypt this message using hill cipher? 07
b) Apply block cipher in traditional symmetric key cipher to convert plain text "FOUR ADND FOUR" (perform encryption and decryption) 08

Section B

Q.6 Solve any five questions 10

a) Anarkali digitally signs a message and sends it to Salim. What does Salim require for verification of the signature?
b) What is authentication?
c) Enlist various ways of key distribution to the user
d) Define threats and vulnerability in network.

e) In a RSA cryptosystem, a participant A uses two prime numbers p=13 and q=11 to generate his public and private keys. If the public key of A is 37, then the private key of A is _____.
f) Which techniques are used to generate a message digest by the network security protocols? Why?
g) Define digital certificate

Q.7	a)	What is message authentication code? Explain its need in the context of security	07
	b)	Explain the necessity of access control mechanism in security.	08
Q.8	a)	Explain in brief two simple hash functions	07
	b)	Explain the steps of RSA algorithm with example.	08
Q.9	a)	Explain Man-in-middle attack with neat diagram and measures to avoid the attack.	07
	b)	Write short note on Diffie-Hellman key exchange algorithm	08
Q.10	a)	What is the significance of digital signature? Explain in detail with an example.	07
	b)	Is there need for public key cryptography? Justify and explain its working	08

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-4018
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (C.S.E.) (Sem-VII)
Data Warehousing & Data Mining
[Revised

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B (i) Q.1 from section A and Q.6 from section B are compulsory.
(ii) From the remaining solve any two questions from each section.

Section - A

Q.1 Solve any five questions

a) State any two needs of datawarehouse 02
b) State attributes of Quality Data. 02
c) State the names of data models used for multidimensional data. 02
d) A data warehouse is subject-oriented. What would be the major critical business subjects for the following companies. i) Medical Hospital ii) University 02
e) Give any two examples of OLAP system. 02
f) How datamart is different from datawarehouse? 02

Q.2 a) Describe three tier architecture of Datawarehouse with suitable diagram. 07
b) Compare OLAP and OLTP 08

Q.3 a) Explain ETL process in detail 07
b) Given a numeric attribute price in dollars, smooth out data to remove noise using bining technique. 4,8,15,21,21,24,25,28,34. 08

Q.4 a) Explain Multidimensional data models. 07
b) Explain typical OLAP operations with suitable diagram. 08

Q.5 a) Explain Concept Hierarchy Generation for dimension ‘Location’ and ‘Time’. 07
b) Explain the significant role of Metadata in Datawarehouse. 08

Section B

Q.6 Solve any five questions

a) State applications of Data Mining 02
b) Give example of association rule 02
c) Give example of outlier in dataset 02
d) Define BI 02
e) What is cluster analysis 02
f) Give example of Market basket analysis 02

Q.7 a) Describe the steps involved in data mining when viewed as a process of knowledge discovery. 07

b) Define each of the following data mining functionalities: characterization, discrimination and clustering. Give examples of each data mining functionality. 08

Q.8 a) Briefly outline the major steps of decision tree classification. 07

b) Why is naïve Bayesian classification called "naïve"? Briefly outline the major ideas of naïve Bayesian classification. 08

Q.9 a) Give major categorisation of Clustering algorithms 07

b) Describe tools and Techniques of BI 08

Q.10 a) Consider the following transactions: 08

Transaction No	Itemsets
101	I1,I2,I5
102	I2,I4
103	12,I3
104	I1,I2,I4
105	I1,I2,II3
106	I1,I3
107	I1,I2

Find all frequent item set with min. support =50%, min. conf=50%

b) List and describe the five primitives for specifying a data mining task. 07

Total No. of Printed Pages: 02

SUBJECT CODE NO:- H-4025
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (C.S.E.) (Sem-VII)
Open Elective-II
Big Data Analytics
[Revised]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Question 1 and 6 are compulsory.
2. Attempt any two from remaining from each section.

Section A

Q.1 Answer any five 10
a) Why logistic regression is very popular?
b) Define Big data analytics.
c) What is the difference between -copyformlocal and -put command?
d) What is rack awareness?
e) How VMware kernel different from other kernel?
f) Define Hadoop streaming?

Q.2
a) Explain the sources of computers and human generated big structured data? 08
b) Define Data node? How does name node tackle data node failures? 07

Q.3
a) What value is the sum of residuals of linear regression close to? Justify how do you know that linear regression is suitable for any given data? 08 07
b) Stat the assumptions in linear regression model.

Q.4
a) Define virtualization and what benefits does virtualization 08
b) Explain data virtualization & storage virtualization. 07

Q.5 Write short note on: 15
a) Difference between linear regression and logistic regression.
b) Replication factor
c) Hypervisor in virtualization

Section B

Q.6 Answer any five:- 10
a) Mention various input formats in Map Reduce
b) Differentiate SORT BY & ORDER BY
c) How can we see only top 15 records from the student.txt out of 100 records in the HDFS directory.
d) What are the main components of MapReduce
e) When to use - target- dir and when to use –ware house- dir while importing data.
f) What is the role of JDBC driver in sqoop.

Q.7	a)	Explain in detail Hadoop distributed file system.	08
	b)	Explain the difference between RDBMS and Hadoop.	07
Q.8	a)	Define HBASE, why we need HBASE? What are the features?	08
	b)	Explain procedure to write UDF in hive.	07
Q.9	a)	Explain the architecture of a pig with a neat sketch?	08
	b)	Explain about the various data types supported by HIVEQL with an example.	07
Q.10	Write short note on		15
	a)	Execution modes in pig	
	b)	Differentiate hive and rdbms	
	c)	Characteristics of hive	

Total No. of Printed Pages: 02

SUBJECT CODE NO:- H-4038
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (CSE.) (Sem-VII)
Elective –III Cloud Technology
[Revised]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Question no 1. And 6 are compulsory
2. Attempt any two questions from remaining question from each section.

Section A

Q.1 Attempt any FIVE 10
a) Enlist the Benefits of Cloud.
b) Eucalyptus is used for…..
c) Write any 3 examples of IaaS.
d) PaaS is used for…….
e) What is the use of SOA?
f) What is an Instance in Amazon?
g) Elasticity in cloud is ----------.

Q.2 a. An user wants to prepare a presentation for a company from a particular location. If he wants that his friend should collaboratively work with him which option is more suitable for him? Explain. 08
b. Explain PaaS with suitable example. 07

Q.3 a. Describe the AWS components in detail. 08
b. Explain the Characteristics of cloud Computing. 07

Q.4 a. Explain the IaaS Characteristics in detail. 08
b. Write a note on Salesforce.com service. 07

Q.5 a. Which parameters are to be considered for the successful Event Management Describe it with one example? 08
b. Describe the use of Eucalyptus with suitable diagram. 07

Section B

Q.6 Attempt any FIVE 10
a. What is PVM?
b. Neutron is helpful to…….
c. What is VMM in Ubuntu?
d. What is the use of Heat?
e. Type 1 Hypervisor is used for……..
f. Enlist the uses of a Glance.
g. Which are the Storage components in Openstack?

Q.7 a. Write a short note on Swift & Cinder components of Openstack 08
b. What are the different ways to use the available hardware resources of the computer system for performing variety of tasks? Give details with the help of suitable example. 07

Q.8	a.	Draw and explain the Glance & Nova service of Open stack.	08
	b.	Describe the Openstack terminologies.	07
Q.9	a.	Write the advantages & disadvantages of Virtualization.	08
	b.	What are the types of Hypervisor? Explain the roles.	07
Q.10	a.	Enlist & explain all the steps required to install KVM.	08
	b.	Draw the Openstack architecture. Explain.	07

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-4059
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (C.S.E.) (Sem-VII)
Elective –IV Software Testing
(Revised)

[Time: Two Hours] **[Max. Marks: 40]**

Please check whether you have got the right question paper.

N.B
1) Q.No.1 and 5 are compulsory.
2) Solve any two from Q.No.2 to 4.
3) Solve any two from Q.No.6 to 8.

Section A

Q.1 Answer any three of following 06
1) What is Y2K Bug?
2) Differentiate between verification & validation.
3) What is mean by quality of reliability
4) What is the cost of Bug

Q.2 Explain in detail Disney's Lion King problem. 07

Q.3 Write a short note on pesticide paradox 07

Q.4 Describe in detail the testing axioms product specifications are never fail. 07

Section B

Q.5 Answer any three of following 06
1) What is meant by Black Box testing
2) Define stress and load tools?
3) Define the concept of software review
4) What is CMM?

Q.6 Explain in detail equivalence partitioning. 07

Q.7 Describe the concept of format technical review in detail. 07

Q.8 Write a short note on Graph Based Testing with example. 07

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-4060
FACULTY OF SCIENCE AND TECHNOLOGY
Final B.Tech. (C.S.E.) (Sem-VII)
Elective -IV
Service Oriented Architecture and Web Services
(Revised)

[Time: Two Hours] **[Max.Marks: 40]**

Please check whether you have got the right question paper.

N.B
1) Q.No.1 and no.5 are compulsory.
2) Attempt any two questions from remaining questions from each section

Section A

Q.1 Attempt any three. 06
a) What are the specifications for basic web service architecture?
b) Define atomic services & composite services.
c) State service component.
d) What is XML?

Q.2
a) What is service orientation? Outline the common principle of service orientation. 04
b) Explain the web services platform in details. 03

Q.3
a) Describe the technical benefits of service oriented architecture. 04
b) Describe the common business drivers for integration in web services. 03

Q.4
a) Write a short note on: 04
1) Service Contracts
2) Service Level Data Model

b) Explain the interoperability across. NET and J2EE applications. 03

Section B

Q.5 Attempt any three. 06
a) What is Orchestration and choreography?
b) Give examples of Service oriented businesses
c) Enlist the five steps of developing and consuming a JAX-RPC service.
d) What is notification in web service?

Q.6
a) Explain the SOA for multi-channel access. 04
b) Explain JAX-RPC client server interaction in detail. 03

Q.7	a)	Explain web service metadata management in detail.	04
	b)	Explain the benefits of using BPM, SOA & Web services.	03
Q.8	a)	Describe the advanced messaging techniques used in web service.	04
	b)	Explain the RPC style and Document style in SOAP	03

Total No. of Printed Pages:3

SUBJECT CODE NO:- H-618
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (CGPA) (Sem-I)
Data Warehousing & Data Mining

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B (i) Q1 and Q6 are compulsory.
(ii) Solve any two from question 2, 3, 4, 5 and any two from questions 7, 8, 9. 10.

Section A

Q.1 a) Explain the following: Fact Constellation Schema. (04)
b) What is a concept hierarchy? Give example. (03)
c) Explain enterprise warehouse, data marts and virtual warehouse. (03)

Q.2 a) What is a data cube? Explain with example various operations that can be performed on it. (08)
b) Explain ways in which data Mining systems are classified. (07)

Q.3 a) Differentiate between OLTP and OLAP. (07)
b) A shopkeeper takes a survey of month-wise number of customers & total sales at his shop. The collected data is: (08)

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
No. of Customers	105	50	25	40	28	42	103	110	40	112	113	103
total Sale (Thousands)	90	40	15	36	25	55	95	98	51	89	95	81

Calculate mean, mode, median and Std. deviation of No. of customers and total sale.

Q.4 a) Suppose a data warehouse consists of four dimensions data, spectator, location and game. There are two measures count & charger where charge is the fare the spectator pays when watching a game on a given date. Spectators may be students, adults or seniors with each category having different charge rates. (08)
- Draw a star schema diagram for the data warehouse.
- Starting with base cuboid [data, spectator, location, game] what specific OLAP operations should one perform in order to list total charges paid by student spectators at Mumbai in 2010.

b) Explain the multi-tier data warehouse architecture. (07)

Q.5 a) Discuss various issues in Data Mining. (07)
b) Explain the following kinds of data on which data mining can be performed with their applications. (08)

- Sequence data, spatio temporal data.
- Text & Multimedia data.

Section B

Q.6 a) Explain frequent itemsets & association ruler. (05)

b) Explain classification by decision tree induction. (05)

Q.7 a) Consider the following database of Cars which are labelled as stolen or not. The attributes are Colour, Type and Origin. The training dataset has 10 records. Using Naïve Bayes Classification, classify the following record as stolen = yes/no: (08)

ID	Colour	Type	Origin	Stolen?
1	Red	Sports	Domestic	Yes
2	Red	Sports	Domestic	No
3	Red	Sports	Domestic	Yes
4	Yellow	Sports	Domestic	No
5	Yellow	Sports	Imported	Yes
6	Yellow	SUV	Imported	No
7	Yellow	SUV	Imported	Yes
8	Yellow	SUV	Domestic	No
9	Red	SUV	Imported	No
10	Red	Sports	Imported	Yes

Record to be classified:
(Colour = Red, Type = SUV, Origin = Domestic).

b) What is Business Intelligence? Draw and explain BI architecture. (07)

Q.8 a) What are agglomerative and Divisive Hierarchical Clustering methods. (05)

b) Using ID3 Decision Tree algorithm. Compute a decision tree for the following dataset: (10)

ID	Hair Colour	Height	Weight	Lotion	Sunburn (Result)
1	Black	Average	light	no	yes
2	Black	tall	average	yes	no
3	Brown	Short	average	yes	no
4	Black	Short	average	no	yes
5	White	average	heavy	no	yes
6	Brown	tall	heavy	no	no
7	Brown	average	heavy	no	no
8	Black	short	light	yes	no

The class labels the record as having sunburns or not.

Q.9 a) Explain rule-based classification with (08)
- If-Then ruler
- Rule Extraction from a decision tree.

b) What is support vector machine? Explain in detail (07)

Q.10 a) Write a short note on Web Mining. (05)

b) Consider following Datashet with 7 transactions: (10)

Transaction ID	Itemset
1	I1, I2, I3, I4
2	I1, I2, I4
3	I1, I2
4	I2, I3, I4
5	I2, I3
6	I3, I4
7	I2, I4

Considering min. support = 30% and min. confidence = 80%

(i) Find frequent itemsets (MSC=2)

(ii) Find strong association ruler

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-119
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-II)
Computer System Security and Laws (CSE/IT)
[REV]

[Time: Three Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N.B
i. Q. No. 1 and Q. No. 6 are compulsory.
ii. From the remaining questions in section A & B students are supposed to solve any two questions from each section.

Section A

Q.1	a)	Explain CIA principles of security.	05
	b)	Explain symmetric and Asymmetric key cryptography.	05
Q.2	a)	What threads do attacks on social networking sites pose? How can those be prevented.	07
	b)	What is a "worm"? What is the significant difference between worm and a virus.	08
Q.3	a)	What is Biometric? How biometric will helpful in achieving the security.	07
	b)	How can one add unpredictability to the mechanism of something derived from the password?	08
Q.4	a)	What is important aspect that establishes trust in digital signature?	07
	b)	What is role of firewall in N/W security? Explain types of firewall and it's application.	08
Q.5	a)	Discuss homophonic substitution cipher with references to mono-alphabetic cipher.	07
	b)	Explain the security of RSA algorithm.	08

Section B

Q.6	a)	What is the purpose of SSL alert protocol?	05
	b)	Explain need of WAP protocol & define it's working.	05
Q.7	a)	How does SET protect payment information from the merchant?	07
	b)	Differentiate between GSM and 3G technology from security stand point.	08
Q.8	a)	Discuss cyber-crime examples.	07
	b)	What is the purpose of incident response plan and elaborate it's goals.	08
Q.9	a)	Explain IT ACT 2000 with respect to it's scope, jurisdiction and offense.	07
	b)	Explain incident prevention & detection with example.	08
Q.10	a)	Discuss the various action taken against investigative – incident – response.	07
	b)	Explain how NMAP & wire shark tool work out as forensic tool.	08

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-149
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-II)
Mobile Computing (CSE/IT)
[REV]

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B
i. Q. No. 1 & Q No. 6 are compulsory.
ii. Attempt any two questions from remaining questions in each section.
iii. Assume suitable data if necessary.

Section A

Q.1	Solve [Any two] a) Give IPhone OS features b) Write details about 4G. c) Explain MAC	10
Q.2	a) Write about Android OS &its evolutionsversions. b) Explain handoff with link transfer types.	08 07
Q.3	a) Explain GSM architecture. b) Give details about first generation phone & smart phone.	08 07
Q.4	a) Explain classical & slotted Aloha. b) Explain spread Aloha multiple access in CDMA.	08 07
Q.5	a) Write comparative study between any three popular mobile O.S. b) Give details of FDMA with diagram.	08 07

Section B

Q.6	Solve [Any two] a) Write note on VOIP b) Explain WAP stack c) Write about Text Formatting in wml	10
Q.7	a) Give details about Agent discovery in mobile IP. b) Explain mobile IPv4 & IPv6.	08 07
Q.8	a) Explain WAP in details. b) Give details about implementing enterprise WAP stratergy.	08 07

Q.9	a)	Explain Events in wml.	08
	b)	Explain phone.com	07
Q.10	a)	Give details about CDPD.	08
	b)	Write wml program for addition using extern function.	07

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-185
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-II)
Soft Computing
[Revised]

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B 1) Q.1 from section A and Q.6 from section B are compulsory.
2) Attempt any two questions from the remaining questions in each section.
3) Assume suitable data, if necessary.

SECTION – A

Q.1 Attempt any two of the following. 10
a) What are the benefits of ANN? Explain any two applications of ANN.
b) Explain the features of Hopfield network.
c) Sketch & explain in detail the model of artificial neuron.

Q.2 a) Discuss in details the implementation of AND gate using Mc Culloch Pitts neuron model. 07
b) What is hetero associative memory network? Explain the training algorithm of hetero associative network. 08

Q.3 a) Explain linear separable and non – linearly separable pattern with example. 07
b) What is Hop field network? Explain algorithm to store and recall a set of bipolar patterns in Hop field network**.** 08

Q.4 a) Draw the architecture of a BAM network and discuss in details the training algorithm. 07
b) Train a hetero associative memory network using Hebb rule to store input row vector. 08
$S = (S_1, S_2, S_3, S_4)$ to the output row vector $T = (t_2, t_1)$. The vector pairs are given in table.

I/P target	S_1	S_2	S_3	S_4	T_1	T_2
1	1	0	1	0	1	0
2	1	0	0	1	1	0

Q.5 Write short notes (Any Three) 15
a) Soft computing Vs Hard Computing
b) Limitations of Back propagation learning algorithm.
c) Structure of Biological Neuron
d) Error correction & gradient decent rule.
e) Pattern Association Vs Pattern classification.

SECTION – B

Q.6 Attempt any two 10

a) Describe fuzzy membership function.
b) Explain pattern clustering network.
c) Describe properties of fuzzy set.

Q.7 a) Describe self – Organizing feature map algorithm. 08

b) Design a kohnen net with two cluster units and three I/P units. The weight vector for the close units are [0.9, 0.7, 0.6] & [0.4, 0.3, 0.5]. Find the wining cluster unit for the I/P vector [0.4, 0.2, 0.1] use learning rate of 0.2. Find the new weights for the winning unit. 07

Q.8 a) Consider two fuzzy sets. 10

$$\underset{\sim}{A} = \left\{\frac{1}{2.0} + \frac{0.65}{4.0} + \frac{0.5}{6.0} + \frac{0.35}{8.0} + \frac{0}{10.0}\right\}$$

$$\underset{\sim}{B} = \left\{\frac{0}{2.0} + \frac{0.35}{4.0} + \frac{0.5}{6.0} + \frac{0.65}{8.0} + \frac{1}{10.0}\right\}$$

Find the following.

a) $\underset{\sim}{A} \cup \underset{\sim}{B}$
b) $\underset{\sim}{A} \cap \underset{\sim}{B}$
c) $\bar{\underset{\sim}{A}} \cup \underset{\sim}{B}$
d) $\overline{\underset{\sim}{A} \cup \underset{\sim}{B}}$

b) How genetic algorithm differs from traditional algorithm. 05

Q.9 a) Mention the role fitness function in GA and what are the requirements of GA. What are the parameters of GA. 07

b) What is Defuzzification? Explain different defuzzification method with an example. 08

Q.10 Solve any three shorts note. 15

a) Learning vector Quantization
b) Application of fuzzy control in washing machine
c) Architecture of Kohnen Self Organizing map
d) Fuzzy If – then – rules
e) Competitive learning

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Total No. of Printed Pages:2

SUBJECT CODE NO:- H-238
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (ECT/CSE/IT) (Sem-II)
Elective-II: Instructional Technology for E-Learning
[Revised]

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.1 from Section A and Q.No.6 from Section B are compulsory.
ii) From the remaining questions in Section A and B solve any two Questions from each Section.

Section A

Q.1 What is an Instructural Design? Explain following:- 10
(i) Psychological basis for learning
(ii) Bloom's learning taxonomy
(iii) What is andragogy and Pedagogy.

Q.2 a) What are considerations and principles of adult learning? Explain how did Instruction Design evolve. 07
b) What is e-learning ? Explain E-learning approaches and E-learning components. 08

Q.3 a) With suitable examples explain synchronous & asynchronous e-learning. 07
b) What do you mean by Quality of e-learning? Explain requirements for developing e-learning course. 08

Q.4 a) Explain the activities, people and technology involved in e-learning. 07
b) With respect to designing an e-learning course explain the following: 08
i) Need Analysis ii) target audience (iii) Course content

Q.5 Write short notes on the following (Any three) 15
(i) Instructional Design models
(ii) Blended learning
(iii) Instructional media
(iv) Good practices

Section B

Q.6 a) What is an interactive content? How subject matter experts contribute to e-learning development. 05
b) Discuss various tips of content development and Language style. 05

Q.7 a) What is a story board? How it is created explain. 08
b) Explain (i) Integrating media elements (ii) Developing practice and assessment tests. 07

Q.8 a) What do you mean by courseware development? Explain, detailing session plan & Trainer AIDS. 08
b) Explain Dale's cone of experience, Discuss its objectives. 07

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Q.9 a) What are the considerations for making a lesson plan? Explain course design document. 07

b) (i) What are learning platform? Explain proprietary and open sources. 08

(ii) Explain moodle and other open-source LMS solutions.

Q.10 Write short notes on the following (Any Three) 15

(i) Structure of an interactive e-lesson

(ii) Gagne's Nine events

(iii) Types of authoring tools

(iv) Facilitating learner's activities.

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-239
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-II)
Elective-II: Remote Sensing & Geographical Information System
[Revised]

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.1 and Q.No.6 are compulsory.
ii) Attempt any two questions from the remaining questions in each section.
iii) Assume suitable data wherever necessary.

Section A

Q.1	Solve any two a) Explain Principal of remote sensing b) Explain Reflectance characteristics of Earths cover type. c) Explain Spectral signature.	10
Q.2	a) Explain electromagnetic spectrum b) What is platform explain different types of sensors.	07 08
Q.3	a) Explain sensor resolution b) Explain geo-referencing.	07 08
Q.4	a) Explain the concept rectification of images b) Explain nearest neighbor interpolation methods in the rectification of images.	07 08
Q.5	a) Explain radiometric Resolution. b) Explain different software aspects of digital image processing.	08 07

Section B

Q.6	Solve any two a) Explain image classification techniques. b) Explain image enhancement techniques c) Explain image Registration	10
Q.7	a) What is GIS & explain its need? b) Explain Integration of satellite images?	07 08
Q.8	a) Explain different date inputs for GIS b) Explain vector data model?	07 08
Q.9	a) Explain web GIS in detail. b) What is data exploration.	07 08
Q.10	a) Explain raster data analysis & vector data analysis b) Explain the concept Terrain Mapping & analysis.	08 07

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-240
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-II)
Elective-II: Green IT (CSE/IT)
[Revised]

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.1 and Q.No.6 are compulsory.
ii) Solve any two questions from Q.No.2 to Q.No.5 for Section A and any two questions from Q.No.7 to Q.No.10 from Section B.
iii) Draw appropriate diagrams wherever necessary.

Section A

Q.1	a)	Describe 3Rs of Green IT	04
	b)	What is green Software? Explain context awareness?	06
Q.2	a)	Describe various energy saving software techniques.	07
	b)	Explain the following software sustainability attributes: 1) Development related attributes. 2) Process-related attributes	08
Q.3	a)	Explain the five green and profit oriented policies employed for scheduling by green broker.	08
	b)	Explain following:- 1) Data efficiency 2) Idle efficiency	07
Q.4	a)	Describe Energy challenges for the Data Centres.	07
	b)	Describe following Green Data Centre Metrics: 1) PUE & 2) DCiE How are they calculated?	08
Q.5	a)	Explain following energy management techniques for hard disks? 1) State transitioning 2) Caching.	08
	b)	What are the common techniques for managing system-level energy management? Elaborate on any one.	07

Section B

Q.6	a)	Elaborate on the challenges of Next Generation Networks.	04
	b)	Describe the objectives of Green Network Protocols.	06

Q.7	a)	Describe the softwares and the systems that are used to manage an organisations environmental and greening activities.	07
	b)	Describe Green Cloud Architecture in detail.	08
Q.8	a)	Explain the importance of EPEAT.	08
	b)	Describe the enablers for Green IT.	07
Q.9	a)	Describe the seven step approach to creating Greening IT strategy.	08
	b)	Describe the features of cloud that enable Green Computing.	07
Q.10	Write Short notes on (any three):		15

1) EMAN
2) Organisational and Enterprise Greening.
3) ERP challenges and deficiencies with respect to EMIS.
4) Smart Grid.

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-241
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-II)
Elective-II: Agile Methodology
[Revised]

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B.: 1) Q.1 & Q.6 are compulsory question.
2) Attempt any two questions from Q.2 to 5 and from Q.7 to 10.
3) Assume suitable data wherever necessary.

Section A

Q.1	a)	What are different Agile tools?	05
	b)	Explain burn down chart.	05
Q.2	a)	Describe Agile life cycle. What is it's impact on Agile testing?	08
	b)	Explain the process of TDD with neat and labeled diagram.	07
Q.3	a)	Describe refactoring and pair programming.	08
	b)	What are the characteristics and content of user stories?	07
Q.4	a)	Explain following term- I) Scrum Master II) Product Owner III) Daily Scrum IV) Spike	08
	b)	Explain risk based testing and regression testing in Agile.	07
Q.5	a)	How Agile estimation and planning is done. What do you understand about product backlog.	08
	b)	Describe the different design and development practices in Agile Project.	07

Section B

Q.6	a)	Explain Market Scenario of Agile.	05
	b)	What are Agile design practices?	05
Q.7	a)	Explain dependency inversion principle in Agile design.	08
	b)	Describe Agile ALM and it's role in Agile project.	07
Q.8	a)	State interface segregation principle.	08
	b)	What is version control system? Explain remote and distributed version control system.	07
Q.9	a)	Describe various challenges in Agile.	08
	b)	Explain single responsibility principle.	07
Q.10	a)	How the Agile is different than traditional software development model.	08
	b)	Explain different techniques of refactoring.	07

Total No. of Printed Pages:3

SUBJECT CODE NO:- H-244
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-II)
Elective-II: Network Infrastructure Management
[Revised]

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

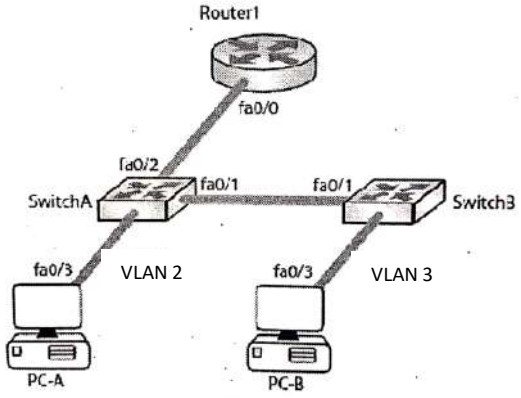
N.B I) Question no. 1 and 6 are compulsory.
II) Attempt any two from the remaining in each section.

Section A

Q.1 Solve any two 10

1. Explain the concept of spanning tree? How and where should we use STP?
2. What is SAN? What are the different components of FCSAN?
3. Write down the sequence of steps in boot up process of CISCO router.

Q.2 a) Configure the network such that PC-A in VLAN 2 can ping PC-B in VLAN 3 across the switches. 07

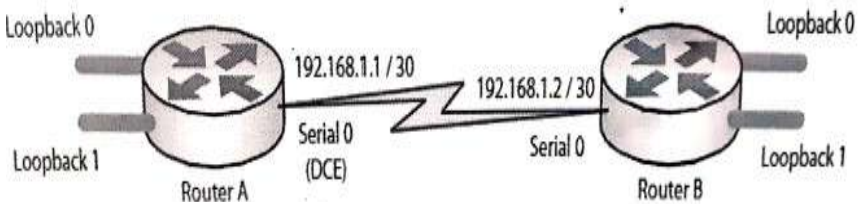


b) Explain the following terms. 08
a) ping b) traceroute c) net stat d) arp – a e) IP config / all

Q.3 a) Configure the network to allow full connectivity using the routing protocol OSPF. 07

1. Use the IP addressing scheme depicted in Figure. Router A needs to be configured with a clock rate on interface serial 0. Set this to 64000.
2. Set telnet access for the router to use the local login permissions of username "banbury" and the password "ccna".
3. Configure the "enable password" to be "cisco".
4. Configure the routing protocol RIPv2 to advertise all networks attached to the router.
5. Ensure the routing information is correct by checking the routing table for entries of your neighbor's addresses.

6. Finally, try to ping all loopback interfaces of your neighbor, and then try to access your neighbor router via telnet.



b) Subnet the n/w address 08
   i) 172.16.72.0 using the subnet?
   ii) mask 255.255.255.248
   iii) and answer the following

      a) how many subnets
      b) how many host per subnet
      c) What are the valid subnet
      d) What is broadcast address of each subnet
      e) What are the valid host

Q.4 a) State the situations where we use NAS & SAN. 07

b) What is NAS? What are the common protocol of NAS? 08

Q.5 Solve any three 15

a) IGRP b) IP routing

c) STP d) Split horizon

Section B

Q.6 Solve any two 10

1) What do you mean by accounting management in n/w management?
2) How to install and config the SNMP and services
3) Differentiate between switch based and server based load balancing

Q.7 a) What is SMI and there attributes of SMI to handle an object? 07

b) Explain SNMP concept? And component of n/w management? 08

Q.8 a) Draw a neat labeled SNMP VS PDU's and explain in detailed? 07

b) Define performance management by using measurable quantities like capacity, traffic, throughput and response time? 08

Q.9 a) Describe the traffic flow of NAT based SLB? 07

b) Describe one armed SLB config? 08

Q.10 Solve any three 15

a) MIB
b) SLB
c) Fault Management
d) SNMP V3

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-245
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-II)
Elective-II: I- Phone Programming
(Revised)

[Time: Three Hours] **[Max.Marks: 80]**

Please check whether you have got the right question paper.

N.B
1. Questions No.1 and 6 are compulsory
2. Attempt any two questions from the remaining section

Section A

Q.1 Solve any two question 10
a) Explain object oriented concept with objective C
b) Explain memory allocation, deallocation using NS auto release Pool.
c) Explain and list the datatype range related with predefined macros

Q.2 a) Explain architecture of ios and SDK framework 07
b) Explain multiple inheritance with program in objective –C 08

Q.3 a) Explain delegates on objective –C with program 07
b) Explain protocols in objective-C with program 08

Q.4 a) Write a command line application with the utilization NSArray 08
b) Explain various methods of NSRange 07

Q.5 a) Write objective –C program to reverse a string 07
b) Write a objective –C program to append a string, find the length of the string value. 08

Section B

Q.6 Solve any two questions 10
a) Explain CoCoa, CoCoa Touch
b) Explain Actions and view controller
c) Draw and explain cocoa architecture for OST

Q.7 a) Write a single view application in iphone 08
b) Create single view application in iphone for login operation 07

Q.8 a) Write a iphone application to show switch. 07
b) Write a program to show use of Accelerometer 08

Q.9 a) How to create navigation base application in ios. 08
b) Write ios application for table view 07

Q.10 Create the ios application for utilizing the UIimage picker to pick the image's 15

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-246
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-II)
Elective-II Hadoop Technology
[Revised]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Q.no.1 and Q.no.6 are compulsory
2. Attempt any two questions from Q.no.2 to Q.no.5 and from Q.no7 to Q.no 10 of each section
3. Figure to the right indicate full marks

Section A

Q.1	a)	What is HIVE? How to create a table by using HIVE QL?	05
	b)	What are the components of PIG Execution Environment?	05
Q.2	a)	What are views in HIVE? What is the difference between internal and external tables in HIVE?	08
	b)	Explain in brief about I/O primitives in Hadoop.	07
Q.3	a)	Explain in brief about Data manipulation in HIVE.	08
	b)	Describe in brief about the PIG Architecture.	07
Q.4	a)	Explain in brief about the data types and schemas in HIVE.	08
	b)	Explain the basic template of a Map reduce program with an example.	07
Q.5	a)	Discuss in brief about the procedure for installation of HIVE.	07
	b)	Discuss in brief about the basic building blocks in Hadoop.	08

Section B

Q.6	a)	What are the acid properties of HBase.	05
	b)	Write advantages of HBase over rest of data storage techniques.	05
Q.7	a)	What is HBase? Explain architecture overview of HBase.	07
	b)	Explain HBase data model and schema design in detail.	08

Q.8	a)	Explain how to troubleshoot administrating of Hadoop.	08
	b)	What is Sqoop? Draw and explain architecture of Sqoop.	07
Q.9	a)	Explain Local HadoopCloudera with example.	07
	b)	Explain cloud Hadoop Amazon EMR in detail.	08
Q.10	a)	Write short note on Oozie, Flume, Zookeeper, yarn .	08
	b)	Explain Incremental importing mute able data in detail.	07

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-306
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-I)
Data Warehousing & Data Mining (CSE/IT)
[OLD]

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B.: 1) Q.1 and Q.6 are compulsory.
2) Assume suitable data if necessary and state it clearly.

Section A

Q.1 A) What is data mart? Describe different approaches of data mart design. 05
B) Compare and contrast OLTP with OLAP. 05

Q.2 A) What is multidimensional modeling? Explain different OLAP operation with example. 08
B) What is necessity of data preprocessing? Explain major task of data preprocessing? 07

Q.3 A) Suppose a group of 12 sales price records has been sorted as follows. 09
5 10 11 13 15 35 50 55 72 92 204 215
Partition them into three bins by each of the following methods.
1) Equal frequency (equi-depth) partitioning.
2) Equal width partitioning.
3) Clustering.
B) Describe the different types of attributes with example? 06

Q.4 A) What is data mining? Explain any one application of data mining in detail. 08
B) Explain the KDD process in detail. 07

Q.5 Write short notes (any three): 15

A) Decision Support System.
B) ETL process.
C) Galaxy Schema.
D) Concept Hierarchy.
E) Methods of measuring data dissimilarity.
F) Data warehouse implementation.

Section B

Q.6 A database has five records. Let minimum support = 2 and minimum confidence= 80%. 10

TID	List of items
T1	M O N K E Y
T2	D O N K E Y
T3	M A K E
T4	M U C K Y
T5	C O K I E

a) Find all frequent item sets using Apriori Algorithm.
b) List all of the strong association rules (with support s and confidence c)

Q.7 A) Apply K- Means algorithm for the following data set. Take K = 2. 10

Food item #	Protein content, P	Fat content, F
Food item # 1	1.1	60
Food item # 2	8.2	20
Food item # 3	4.2	35
Food item # 4	1.5	21
Food item # 5	7.6	15
Food item # 6	2.0	55
Food item # 7	3.9	39

B) Explain cluster analysis with example. 05

Q.8 A) What is classification? Explain the method to devise decision tree? 08
B) Explain the Bayesian classification with example. 07

Q.9 A) What is business intelligence? Describe the framework of BI. 08
B) Describe major tools and techniques of BI. 07

Q.10 Write short notes (any three): 15

a) Transaction Processing vs Analytical Processing.
b) Market basket Analysis.
c) Rule based classification.
d) K-medoid's Algorithm.
e) Linear Regression.

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-340
FACULTY OF SCINECE AND TECHNOLOGY
B.E. (CSE) (Sem-I)
Parallel & Distributed Computing
[OLD]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Solve 3 questions from each section.
2. Question no. 1 from section A and Question no. 6 from section B, are compulsory.
3. From the remaining questions in section A and B, solve any two questions.

Section -A

Q.1	A)	Explain two parallel algorithm models.	05
	B)	Explain the scope of parallel computing.	05
Q.2	A)	Write the example of sparse matrix – vector multiplication, explains the task interaction graph.	08
	B)	Explain the thread creation and termination in Pthreads API.	07
Q.3	A)	Explain recursive decomposition with appropriate example.	08
	B)	Explain the method of data decomposition – partitioning output data with suitable examples.	07
Q.4	A)	Explain the for directive in open NP to specify concurrent iterations and tasks.	07
	B)	With a neat diagram explain SIMD and MIMD architecture. Also give an example showing execution of conditional statements on SIMD architecture.	08
Q.5	A)	Explain CUDA program structure. Give an example of CUDA C program.	07
	B)	Explain CUDA memory types in detail.	08

Section – B

Q.6	A)	Explain any two implementation issues of distributed shared memory.	05
	B)	Compare parallel systems and distributed systems.	05
Q.7	A)	Explain the Lamport's algorithm for mutual exclusion in detail.	08
	B)	Explain: i) Interleaving model. ii) Happened before model.	07
Q.8	A)	With a suitable example explain the algorithm for vector clocks.	08
	B)	Explain the following models of distributed computation. i) Happened before model.	07

ii) Potential causality model.

Q.9 a) Explain any three consistency models in DSM. 08

b) With suitable examples explain the following common file management tasks in Hadoop. 07

i) Adding files and directories.

ii) Retrieving files.

iii) Deleting files.

Q.10 A) With a neat diagram explain the anatomy of a map reduce program. 08

B) Explain any four implementation issues of DSM in detail. 07

Total No. of Printed Pages:2

SUBJECT CODE NO: H-375
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-I)
Principles of Compiler Design
(OLD)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
i. Q. No. 01 and Q. No. 06 are compulsory.
ii. Attempt any other two questionsfrom each section.
iii. Assume suitable data if necessary.

Section A

Q.1 a) What is the role of lexical analyzer? Comment on lexical analysis Vs. parsing. 05

b) What is complier? Explain various phases of compiler in details. 05

Q.2 a) Discuss the structure of LEX program. Also write the procedure tocompile and execute LEX program with example? 08

b) Discuss the problem of left recursion?Alsoexplain method to eliminateit? 07

Q.3 a) What is parse tree? Explain with suitable example the ambiguous grammar? 08

b) How does the predictive parser differ from shift reduce parser? 07

Q.4 a) Explain the following terms of parser LR(0) 08
i) Canonical collection
ii) Augmented Grammar.
iii) Closure
iv) Goto

b) Consider the grammar: 07

$$E \rightarrow E + T/T$$
$$T \rightarrow T * F/F$$
$$F \rightarrow (E)/a/b$$

Design a predictive parsing table for above grammar.

Q.5 a) Draw the transition diagram to recognize tokens – relational operators, unsigned numbers and white spaces? 08

b) What is YACC? Explain the error recovery in YACC? 07

Section B

Q.6 a) Explain the term: basic blocks and flow graphs. 05

b) Explain the working of simple code generator? 05

Q.7 a) Write the semanticrules for the given productions: 08

$$L \rightarrow En$$
$$E \rightarrow E_1 + T$$
$$E \rightarrow T$$
$$T \rightarrow T_1 * F$$
$$T \rightarrow F$$
$$F \rightarrow (E)$$

$F \rightarrow$ digit

Also draw the annotated parse tree for $3 * 5 + 4n$

b) Explain various principal sources of code optimization? 07

Q.8 a) What is three address code? Write three address code & quadruples for following expression $(a + b - c)(c + d * e)(a * b - c)$ 08

b) Explain the working of code generator. 07

Q.9 a) Write a short note on applications of DAG? 08

b) Explain in detail loop unrolling and loop jamming? 07

Q.10 Write a short note on : (any three) 15

a) Inherited synthesizedattributes
b) Object program
c) Peephole optimization
d) Data flow equation

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-413
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-I)
Visual Modeling
[OLD]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Q.No.1 and Q.no.6 are compulsory.
2. Attempt any two questions from the remaining questions in each section.
3. Assume suitable data wherever necessary.

Section – A

Q.1 Solve any two: 10
a) Difference between analysis and design
b) What is model? Explain various purposes of modeling
c) Explain complexity of software.

Q.2 a) Explain the UML approach to software architecture. 07
b) Explain Concurrent, Distributes and Real– time Design Methods. 08

Q.3 a) Explain steps to find actor in use case diagram. 07
b) Define association? Explain association in class diagram using Library Management system. 08

Q.4 a) Explain in detail structural modeling 07
b) Explain the importance and features of interactions diagram. 08

Q.5 a) Draw and explain activity diagram for courseware management system. 07
b) Draw and explain class diagram for ATM system. 08

Section – B

Q.6 Solve any two: 10
a) What is design pattern?
b) Explain abstract factory.
c) Explain creational design pattern.

Q.7 a) Explain organizing the catalog of design pattern 07
b) What is singleton? Explain in detail. 08

Q.8	a)	Describe adapter design pattern in detail.	07
	b)	Explain consequences and implementation of decorator design pattern.	08
Q.9	a)	Describe observer design pattern in detail.	07
	b)	Explain consequences and implementation of strategy design pattern.	08
Q.10	a)	Explain structural design pattern in detail with suitable example.	07
	b)	Explain applicability and structure of command design pattern.	08

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-457
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT/ETC/EE) (Sem-I)
Elective-I: Advanced Business Application Programming- I
(OLD)

[Time: Three Hours] **[Max. Marks: 80]**

Please check whether you have got the right question paper.

N.B
i. Q.No.1 from section A and Q.No.6 from section B are compulsory.
ii. Attempt any two questions from the remaining questions in each section.

Section A

Q.1 Solve any five from following: 10

1) Enlist SAP services.
2) SE38 and SE80.
3) Functions modules.
4) Macro.
5) Enlist SAP modules.
6) Data classes in ABAP.
7) Work Area.

Q.2
a) Explain SAP Netweaver. And also features of SAP Net weaver. 08
b) Explain financial management in SAP ERP. 07

Q.3
a) Explain logistic operation in detail. 07
b) What is the importance of master data in procurement? And also explain material master with different material types. 08

Q.4
a) Explain procurement of sock material. And also explain following terms: 08
i) Materials valuations
ii) Goods receipt
iii) Invoice for purchase order

b) Which are the different terminology used in vendor master and also explain vendor master data? 07

Q.5
a) How to define classes? Write a program to implement classes, methods and static attributes. 08
b) What is difference between database tables and structures in SAP; do structures have primary keys in SAP? 07

Section B

Q.6 Solve any five from following: 10

1) Program calls.
2) SE11, SE13 and SE15.
3) Open SQL.
4) Types of table fields.
5) Table conversion process.
6) Active and inactive objects.
7) Search helps.

Q.7
a) Explain different data modeling components? And also explain how to extract a single database record with example. 08
b) What do you mean by maintenance view? And also write a process to implement maintenance view. 07

Q.8
a) Write a ABAP program for generating classical report for single table. 08
b) Write a step to create domains in ABAP dictionary. 07

Q.9
a) What is difference between transparent pooled and cluster tables in SAP? 08
b) Write a step to create data elements in ABAP dictionary. 07

Q.10
a) What do you mean by table conversion? And also explain the process of table conversion. 08
b) What is the search help? Also explain different types of search helps? And also write how to implement search helps. 07

Total No. of Printed Pages:2

SUBJECT CODE NO:- H-464

FACULTY OF SCINECE AND TECHNOLOGY

B.E. (CSE) (Sem-I)

Elective-I: Artificial Intelligence

[OLD]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
i. Question No.1 and Question No.6 are compulsory.
ii. Attempt any two questions from the remaining questions from each section.
iii. Assume suitable data, if necessary.

Section -A

Q.1 What are the seven important characteristics? Explain with suitable example of each. 10

Q.2
a) Explain A* algorithm with suitable example. 08
b) Elaborate the operation of problem reduction technique as a heuristic search. 07

Q.3
a) Illustrate Truth Maintenance system (TMS) with example. 08
b) Explain different component of a production system. 07

Q.4
a) Convert the following sentence in to prepositional logic 08
1. Marcus was a man & Marcus was a Pompeian
2. All Pompeian's were Romans
3. All Romans were either loyal to caser or hated him
4. Everyone is loyal to someone
b) A problem solving search can proceed either forward or backward. What factors determine the choice of direction for a particular problem? 07

Q.5 Write short notes on: 15
a) Semantic net
b) Conceptual dependency
c) Matching

Section – B

Q.6 Design an expert system for disease diagnosis. 10

Q.7
a) What is planning? Elaborate goal stack planning. 08
b) Elaborate learning by taking advice and discovery. 07

Q.8
a) What are important steps involve in NLP. Give suitable example of each. 08
b) How would the minmax procedure have to be modified to be used by a program playing a three – or four person 07

Q.9	a)	What is game planning? What are the important components require implementing game playing application?	08
	b)	Implement the alpha – beta search procedure. Use it to play a simple game such as tic – tac- toe.	07
Q.10	Write short notes on:		15
	a)	Knowledge acquisition	
	b)	Syntactic processing	
	c)	Rote learning	

Total No. of Printed Pages:01

SUBJECT CODE NO:- H-465
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-I)
Elective-I: Cloud Computing
[Old]

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B 1) Question No. 1 and 6 are compulsory.
2) Attempt any two questions from the remaining in each Section.

Section A

Q.1	Write short notes on any two:		
	a)	SOA	05
	b)	Network Virtualization	05
	c)	Heterogeneous clouds	05
Q.2	a)	Define cloud computing. Explain in detail about different delivery models in cloud.	08
	b)	Explain in detail about Grid Computing.	07
Q.3	a)	Brief on PAAS. Explain Google App Engine in detail.	08
	b)	What is CAAS? Explain in detail.	07
Q.4	a)	What is storage virtualization? Explain different pitfalls of virtualization.	08
	b)	Define Web-Service. Explain SOAP web-service in detail.	07
Q.5	a)	Explain in detail about Identity as a Service.	08
	b)	What is storage as a service? Enlist the differences between traditional and storage cloud.	07

Section B

Q.6	Write short notes on any two:		
	a)	Security challenges in cloud.	05
	b)	MEMS	05
	c)	Pig	05
Q.7	a)	Describe Infrastructure Security at Host Level.	08
	b)	Depict any two cloud databases in detail.	07
Q.8	a)	With a suitable example explain Map-Reduce Model in detail.	08
	b)	Explain in detail Security Management in cloud.	07
Q.9	a)	What is WAP? Explain in detail various protocols used for Mobile devices.	08
	b)	Brief on the need for adopting mobile cloud applications.	07
Q.10	a)	Derive Parallel Efficiency of Parallel Computing.	08
	b)	Brief on the various projects in Hadoop.	07

H-466

Total No. of Printed Pages:02

SUBJECT CODE NO:- H-466
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE) (Sem-I)
Elective-I: Multicore Computing
[OLD]

[Time: Three Hours] **[Max. Marks:80]**

Please check whether you have got the right question paper.

N.B.: 1) Solve 3 questions from each Section.
2) Question no. 1 from Section A and Question no.6 from Section B, are compulsory.
3) From the remaining questions in Section A and B, solve any two questions.

Section A

Q.1	a)	Why is it becoming mainstream to use many core processors?	05
	b)	Compare single core and multicore processor.	05
Q.2	a)	Describe the various approaches in parallel Programming.	07
	b)	What is asymmetric Multiprocessing? Describe the architecture of asymmetric Multiprocessing System.	08
Q.3	a)	Explain various challenges in software development for multicore system.	07
	b)	Describe the architecture of symmetric multiprocessing system.	08
Q.4	a)	Describe the Multikernel O.S. architecture with neat labeled diagram.	07
	b)	Explain the load balancing techniques used in parallel algorithm design.	08
Q.5	Write short note on:		
	a)	Dual Core Processor	05
	b)	AMP Scheduling	05
	c)	Reality of parallelization	05

Section B

Q.6	a)	Illustrate the effect of granularity on Performance.	05
	b)	Describe the methods of minimizing the interaction overhead.	05
Q.7	a)	Discuss in detail about the hardware constraints applicable to improve scalability.	07
	b)	Explain the decomposition techniques for parallel algorithm.	08
Q.8	a)	Summarize the characteristics of task interaction.	07
	b)	Describe with architecture the recent Windows O.S. supporting multicore architecture.	08
Q.9	a)	Compare the multicore O.S. and Multiprocessor O.S.	07
	b)	Describe various schemes for static mapping used for load balancing.	08

Q.10 Write short note on:

a) Multicore O.S. 05

b) Dependency Graph 05

c) Scalability of parallel System. 05

H-471

Total No. of Printed Pages:1

SUBJECT CODE NO:- H-471
FACULTY OF SCIENCE AND TECHNOLOGY
B.E. (CSE/IT) (Sem-I)
Elective-I: Internet of Things
(OLD)

[Time:Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B
1. Q.No.1 &Q.No.6 are compulsory.
2. Attempt any two questions from the remaining in each section.

Section A

Q.1	Solve any two questions		
	i)	Four pillars of IOT	05
	ii)	RFID	05
	iii)	Zigbee	05
Q.2	a)	Explain in details layered architecture of IOT.	08
	b)	Explain wired and wireless technology in IOT.	07
Q.3	a)	Explain with diagram protocol stack for IOT.	08
	b)	Explain IOT with cloud architecture.	07
Q.4	a)	Explain design guidelines of IOT.	08
	b)	Explain IOT networking and communication.	07
Q.5	a)	Explain challenges in WSN.	08
	b)	Explain REST protocol in details.	07

Section B

Q.6	Solve any two		
	i)	WOT	05
	ii)	Need of security for IOT	05
	iii)	Role of IOT to increase autonomy	05
Q.7	a)	Explain security requirement in IOT	08
	b)	Explain unified multitier WOT architecture in details.	07
Q.8	a)	Explain security and privacy in IOT for cloud.	08
	b)	Explain data virtualization.	07
Q.9	a)	Explain in details access control and message integrity for IOT.	08
	b)	Explain business innovation in IOT.	07
Q.10	a)	Explain home automation application of IOT.	08
	b)	Explain smart wearable application of IOT.	07