

[Time: 3 Hours]

[Marks:80]

Please check whether you have got the right question paper.

- N.B:
1. Question No. 1 is compulsory
 2. Attempt any **Three** questions out of remaining.
 3. Assume suitable data if required.

Q. 1 Solve any Four:

- a) Explain Information Technology Project Methodology (ITPM). (05)
- b) Define scope of the project. (05)
- c) Explain four P's with respect to Project Management. (05)
- d) What is Project? What are the attributes of a project? (05)
- e) Define Project charter. (05)

- Q. 2**
- a) Describe the five phases of IT project Methodology. (10)
 - b) Explain various project scheduling techniques. Explain the difference between CPM and PERT (10)

- Q. 3**
- a) Explain Formal and Informal Organization (10)
 - b) Describe the relation between MOV, Scope and WBS (10)

- Q. 4**
- a) What is the role of implementation Plan? Compare various implementation approaches? (10)
 - b) Write a note on Project leadership and ethics. (10)

- Q. 5**
- a) Explain how can a system be a technical success but an organizational failure? (10)
 - b) Explain the steps involved in terminating a project. (10)

- Q. 6**
- a) Explain work breakdown structure with example. (10)
 - b) Suppose you are the project manager of a large software development project. List three common types of risks that your project might suffer? Point out the main steps that you would follow to effectively manage risks in your project

(3 Hours)

[Total Marks: 80]

- i. Q. 1. Compulsory.
- ii. Attempt any three from the remaining.
- iii. Assume suitable data.

- Q1 Develop a complete business plan for any one online application. (20)
- Q2 a) List the e-payment modes available in e-commerce. Explain any two of them in detail with processing cycle. (10)
- b) Discuss Ola-cabs marketing strategy in detail. (10)
- Q3 a) Discuss the probable threats in an e-commerce environment with solutions. (10)
- b) With one case study explain how SCM is an important part of the growth of the business. (10)
- Q4 a) Discuss the CRM strategy adopted by Vodafone to acquire and convert the customer for 4G service. (10)
- b) Explain with example the components of SOSTAC framework to promote the service. (10)
- Q5 a) Discuss 7s Strategic framework for change management. (10)
- b) Draw a flow process chart showing the main operations performed by users on any of the e-commerce web-site. (10)
- Q6 Write short note(Any 2)
- a) Discuss the use of SLEPT framework. (10)
- b) Comment on how ethical issues can affect e-marketing. (10)
- c) Explain with example that “e-business strategy model is dynamic not static.” (10)
- d) Discuss how the combinations of revenue models can help us in generating more revenue in e-commerce. (10)
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(3 Hours)

[Total Marks: 80]

Note : 1. Question number 1 is **compulsory**.2. Solve any **three** questions out of the remaining **five** questions

- (1) a. Consider that a geographical service area of a cellular system is 4900km^2 . (10)
 A total of 1190 radio channels are available for handling traffic. Suppose the area of a cell is 14km^2
 i) How many times would the cluster of size 7 have to be replicated in order to cover the entire service area? Calculate the number of channels per cell and the system capacity.
 ii) If the cluster size is decreased from 7 to 4, How many times would the cluster of size 4 have to be replicated in order to cover the entire service area? Calculate the number of channels per cell and the system capacity for this case.
- b. Discuss the threats and challenges in wireless systems. Explain the different types of device security issues. (10)
- (2) a. Why is tunneling required in VPN. What are the protocols which support VPN (10)
 b. Explain the main factors of change in economics of wireless technology. (10)
- (3) a. Explain the ZigBee (LR-WPAN) Stack Architecture with a neat diagram. (10)
 b. List the 802.11 MAC management functions. Explain in detail Power Management function with a neat diagram (10)
- (4) a. Explain in detail GSM Privacy and Authentication with neat diagram (05)
 b. Explain Hidden and exposed terminal problem with solution. (05)
 c. Explain the evolution of cellular systems highlighting 1G/2G/3G and 4G. (10)
- (5) a. Why is the concept of Spread Spectrum important? Briefly explain FHSS and DSSS concept. (10)
 b. Neatly explain the WLL Architecture. Explain the two local loop techniques with diagram. (10)
- (6) Write short notes on (**any 2**): (20)
 a) Channel Assignment Strategies
 b) WiMax Technology
 c) Handoff Process
 d) Multiple Access Techniques

Duration – 3hrs

Marks- 80

- N.B. (1) Question no. 1 is compulsory.**
(2) Attempt any three from remaining five questions.
(3) Assume suitable data, if necessary.

- Q1. a. Explain the architecture of MCC. **05**
 b. Comparison of Internal Security Implementation Vs Using a SaaS Provider **05**
 c. Explain the AAA model. **05**
 d. List and describe the Cloud computing risk and issue by Gartner. **05**
- Q 2. a. Write SOA for Cloud Application. **10**
 b. Explain cloud Storage gateway and Host Security for PAAS **10**
- Q3. a. Write about GFS and Amazon Simple DB. **10**
 b. What are the different cloud migration techniques? Write merit and demerit of each technique. **10**
- Q4. a. What are the factors for a Successful cloud implementation? **10**
 b. Explain the key driver for cloud computing and key benefits for SMBs. **10**
- Q5. a. Explain the Virtualization Structure and its benefit. **10**
 b. Explain types of cloud-based service with an example. **10**
- Q6. Write a note on **20**
1. Features of Eucalyptus
 2. Open-Source Open Stack Cloud Architecture
 3. Modes of Operation of Eucalyptus.
 4. Cloud Types.

(3 Hours)**[Total Marks : 80]**

- N.B :** (1) **Question 1** is compulsory.
 (2) Out of remaining **ANY 3**
 (3) Assume suitable data wherever required.

1. Solve ANY FOUR

- (a) Define Intelligence, artificial Intelligence, Agent, Rational Agent, and logical Agent
 (b) Features of expert system
 (c) Explain Knowledge base agent.
 (d) Describe the difference and similarities between Problem solving and Planning
 (e) Forward Chaining

(20)

2. (a) We have bag of 3 biased coins a,b,c with probability of coming up heads are 20%,60%,80% respectively. One coin is drawn randomly from bag and then coin is flipped 3 times to generate outcome X_1, X_2, X_3 . Draw Bayesian network corresponding to this setup and define necessary conditional probability table

(10)

(b) Explain why Problem Formulation must follow Goal Formulation & solve water jug problem. Water Jug Problem: You are given two jugs, a 4-gallon one and a 3-gallon one, a pump which has unlimited water which you can use to fill the jug, and the ground on which water may be poured. Neither jug has any measuring markings on it. How can you get exactly 2 gallons of water in the 4-gallon jug?.

(10)

3. (a) Explain A* algorithm? What is drawback of A*?

(10)

(b) Explain Supervised and unsupervised learning with example

(10)

4. (a) Explain a partial order planner with an example. Give Disadvantages of Partial order planner

(10)

(b) Give difference between uniformed search and informed search algorithms?

(05)

(c) List Down all types of Agents. Draw Learning agent block diagram

(05)

5. (a) Explain Hill Climbing its drawbacks and how to overcome its drawback

(10)

(b) What is Prolog? Give Structure of Prolog program?

(10)

Write a Prolog Program for family information systems.

Q6: (a) Illustrate the Resolution Proof

(10)

The law says that it is a crime for an American to sell weapons to hostile nations.

The country Nono, an enemy of America, has some missiles, and all of its missiles were sold to it by Colonel West, who is American.

(i) Represent the above sentences in first order predicate logic (FOPL).

(ii) Convert them to clause form.

(iii) Prove that "Colonel West is a criminal" using resolution technique.

(b) Explain ALPHA BETA pruning algorithm with example

(10)

(3 hours)

(80 marks)

1. Question I is compulsory.
2. Answer any 3 from remaining 5 Questions.
3. Figures to the right indicate full marks.
4. Assume suitable data wherever necessary.

Q.1 Solve any four.

20

- a) Why Extreme contrast stretching is thresholding?
- b) Explain what is Digital watermarking?
- c) Explain seperability property of 2D-DFT?
- d) Show that- High pass=original – Low pass.
- e) Consider the image given below. Calculate the direction of the edge at the center point of the image:

50	60	70
5	50	80
7	9	50

Q.2 a) Explain the fundamental steps in digital image processing?

10

b) Perform LZW encoding and decoding for the following sequence: ababababa.

10

Q.3 a) Perform histogram equalization for the data given below and draw the histogram for input and output image.

10

Grey level	0	1	2	3	4	5	6	7
Frequency	123	78	281	417	639	1054	816	688

b) What is morphology? Explain basic morphological functions in detail?

10

Q4 a) Explain in detail region based segmentation.

10

b) Explain the following frequency domain filters:

10

a) Ideal low pass filter

b) Butterworth high pass filter

Q.5 a) Explain wavelet transform?

10

b) Explain in detail image enhancement in spatial domain?

10

Q.6 Write short note on: (Any 4)

20

- a) Hit-or-Miss transform
- b) Applications of image processing
- c) Filters in Spatial Domain
- d) Compare lossy and lossless Compression Techniques
- e) Content Based Image Retrieval (CBIR)
