99-mk : 1st-H-11.

Con. 3168-11.　　　　　　　　(OLD COURSE)　　　　　　　　**RK-3772**

(3 Hours)　　　　　　　　　[Total Marks : 100

N.B. (1) Question No. 1 is **compulsory**.
　　 (2) Solve any **four** questions from the remaining **six** questions.
　　 (3) Assume **suitable** data wherever **required**.

1. (a) Define objects for multimedia systems.　　　　　　　　　　　　4
　 (b) Explain the multimedia data elements required for Video Messaging and Video　8
　　　 Conferencing.
　 (c) Explain multimedia application classes.　　　　　　　　　　　　8

2. (a) Describe the algorithms for the CCITT group 3 standards. How does CCITT　10
　　　 Group 4 differs from CCITT Group 3.
　 (b) Explain MIDI file format with reference to its chunks and MIDI Specification 1.0.　10

3. (a) Explain RIFF file format. How does RIFF file format differ from TIFF file format ?　10
　 (b) Explain JPEG Components and Methodology.　　　　　　　　　　10

4. (a) How RTP with RTCP, RSVP and RTSP are useful for multimedia data transmission ?　10
　　　 Explain with any example.
　 (b) Explain in details WORM structure and read-write operations.　　　　10

5. (a) How does video animation differ from full-motion video ? Calculate the bandwidth　10
　　　 required to display real-time video at 640 * 480 resolution at a 30 Hz frame
　　　 rate in 24 bits (true) color.
　 (b) What is ISDN ? Explain Windows Telephony Architecture.　　　　　10

6. (a) Classify the types of workflow and design workflow for Imaging (Scanning)　10
　　　 Application.
　 (b) Explain different scheduling and policing mechanism in multimedia networking.　10

7. (a) Explain Multimedia authoring system application and user interface design　8
　　　 considerations.
　 (b) Explain essential design steps (design methodology) for multimedia system design　12
　　　 with any example.

Con. 3004–11.　　　　　　(OLD COURSE)　　　　　　RK–3922

(3 Hours)　　　　　　[Total Marks : 100

N.B. : (1) Question No. **1** is **compulsory**.
　　　(2) Out of remaining questions, attempt any **four** questions.
　　　(3) Assume **suitable** data wherever required but **justify** the same.
　　　(4) **All** questions carry **equal** marks.
　　　(5) Answer to **each** new question to be started on a fresh page.
　　　(6) **Figures** to the **right** in brackets indicate **full** marks.

1. (a) What is project? State the various characteristics of the project.　　(10)
　 (b) For the following project draw the AOA & AON　　(04)

Activity	A	B	C	D	E	F	G	H	I	J	K	L
I. P.	--	--	--	A	B	C	C	C	D	E, F	G	H
Duration	5	2	5	4	1	7	6	4	9	2	3	1

　 (c) Explain the difference between a statement of work, a contract statement of work
　　　and a work requisition or work order.　　(06)

2. (a) What is cost escalation? What are various reasons for cost escalation? Explain any
　　　two in detail.　　(10)
　 (b) What is the purpose of project master plan? Write down the content of project
　　　master plan.　　(10)

3. (a) Explain – Quality Function Deployment.　　(10)
　 (b) What is the role of PMIS in project management? State various features and
　　　functions of PMIS.　　(10)

4. (a) What is concurrent engineering? Explain it in detail.　　(10)
　 (b) What is risk? Explain risk response planning process in detail.　　(10)

5. (a) Briefly explain the content of a project master plan.　　(10)
　 (b) Distinguish between basic project management and programme management. (05)
　 (c) What is GERT? State advantages of GERT over PERT/CPM.　　(05)

6. (a) What is system engineering? Explain it in detail.　　(10)
　 (b) In the Office Automation project suppose the status of the project on week 10 is as
　　　follows –
　　　BCWS = Rs. 600　　　　　ACWP = Rs. 510　　　　　BCWP=Rs.450

　　　Answer the following questions –
　　　　i.　　Compute AV, SV, and CV.　　(03)
　　　　ii.　　Compute the SPI and CPI　　(04)
　　　　iii.　　Using BCAC = Rs. 3000, compute ETC and EAC.　　(03)

7. (a) Explain the process of project initiation with various steps involved in it.　　(10)
　 (b) What is project termination? What are the various reasons of project termination?
　　　Sate the project termination responsibilities of project manager.　　(10)

2|6|2011

B.E IT VIII (Old)
Elective II - Information Security

P4-Exam.-May-11-97
Con. 3011-11.   (OLD COURSE)   RK-3924
                               (3 Hours)   [Total Marks : 100]

N.B. : (1) Question No. **1** is **compulsory**.
     (2) Attempt any **four** questions out of the **rest**.
     (3) **Each** question carries **equal** marks.

Q 1)

a) Design a secure system taking threats, vulnerability, confidentiality for the
   Examination Process (non online)   (10)

     Describe the protocol (formal procedure) which is used for written exams.

   1. How is access restricted to the exam in advance?
   2. How is access restricted to information during the exam?
   3. How is access restricted to exam materials after the exam?
   4. What possible covert channels might examinees try to use to circumvent the above access
      controls? e.g. mobile phones, toilet walls.
   5. How do you know the questions on the exam are authentic?
   6. How can you trust the integrity of the exam paper? How do you know that the paper has
      been reproduced correctly, without copying error?
   7. Does the examiner know your identity? Could this be used to attack you?
   8. Do you know the examiners' identities? Could you use this to attack them, or bribe them?
   9. Do these attacks apply to project exams?

 b) Take Online Exam model and discuss threats, vulnerability and confidentiality for it.   (10)

Q 2)
  a) List the characteristics of a good Firewall. Explain its different types.   (10)

  b) What are the possible threats to data in transit in a communication networks   (10)

Q 3)

    a) What is the need SSL later even if IPSec is available to protect the network? Justify your
       answer with suitable example?   (10)
    b) Explain VLANs and compare Link Encryption and End to End Encryption .   (10)

Q4)

a) Consider on line Banking System, define sensitive , non sensitive attributes.   (10)
Show with sample queries how Direct attack , Inference attack and Tracker attacks are possible.
Suggest different ways to mitigate the problem.

b) Explain KERBEROS and the role of ticket grant sever for authentication?   (10)

Q 5)

  a) What are the different kinds of objects which could require protection in an operating
     system. Discuss File Directory protection scheme assuming files as set of objects and
     users as set of subjects.   (10)
  b) What are non malicious program errors, how they can be prevented or mitigated.   (10)

Q 6)

  a) How is non repudiation achieved ? How is it guaranteed in SET protocol?   (10)
  b) What are cover channels what are timing and storage covert channels. Give   (10)
     suitable and explain.

Q7 Short Note on (Any 2) :   (20)

  1. Biometric Security
  2. Risk Analysis
  3. IEEE code of Ethics
  4. PGP

Con. 3900-11.   (OLD COURSE)   **RK-3918**

(3 Hours)   [Total Marks : 100]

N.B.: (1) Question NO.1 is compulsory.
     (2) Attempt any <u>four</u> out of remaining <u>six</u> questions.
     (3) <u>All</u> questions carry <u>equal</u> marks.

1. (A) Define Data Warehouse? Also explain its need?   [05]
   (B) Draw and explain KDD process diagram?   [05]
   (C) Explain Temporal mining?   [05]
   (D) Differentiate between OLAP V/S OLTP   [05]

2. (A) What is web mining? Illustrate the working of the HITS algorithm?   [05]
   (B) Explain the different operations of OLAP with suitable example?   [05]
   (C) What is visualization? Explain different method visualization with suitable [05]
      example?
   (D) What are the issues to be considered while planning for data warehouse? [05]

3. (A) Describe the ETL cycle of Data warehouse?   [10]
   (B) Define Web mining? Explain web content mining with reference to Crawlers, [10]
      Harvest system, Virtual web view and personalization?

4. (A) Describe features of web enabled Data warehouse? Why is data security a [10]
      major concern for Web-enabled data warehouse?
   (B) A database has five transactions. Let minimum_support =60% and [10]
      minimum_confidence = 80%.
      i) Find all frequent patterns using Apriori algorithm.
      ii) List strong association rules (with support S and Confidence C)

Trans_id	Items
A	1,3,4,6
B	2,3,5,7
C	1,2,3,5,8
D	2,5,9,10
E	1,4

5. (A) What is clustering? Explain k-means clustering algorithm. Suppose the data [10]
      for clustering - {2, 4, 10, 12, 3, 20, 11, 25} Consider k = 2, cluster the given
      data using above algorithm.
   (B) How are top down and bottom up approaches for building data warehouse [10]
      differ? Discuss the merits and limitation of each approach. Also discuss the
      practical approach.

6. (A) What are concept hierarchies? Explain with an example. Describe the concept [10]
      hierarchy using DMQL?
   (B) Explain the different types OLAP? Discuss the merits and limitation of each [10]
      type?

7.   Write short notes on: [20]
   (A) Trends in Data mining
   (B) Explain with example concept MDDB
   (C) Differentiate Star Schema, Snowflake Schema and Fact constellation,
   (D) Spatial Mining.

BE Comp & IT VIII (OLD)
Elective II - Neural Networks & Fuzzy Systems

Con. 3714-11.   (OLD COURSE)   **RK-3780**

(3 Hours)   [Total Marks : 100]

N.B. : A) Question No. 1 is **compulsory**.
     B) Attempt any **four** questions out of the remaining.
     C) Figures to the **right** indicate **full** marks.

1.   A) Determine all α-level sets and all strong α-level sets for the fuzzy set.   06
     $A = \{(1, 0.1), (2, 0.2), (3, 0.3), (4, 0.4), (5, 0.5), (6, 0.6)\}$
    B) Model the following as a fuzzy set using suitable membership function -   06
      "numbers close to 10".
    C) Explain the four standard fuzzy membership functions.   08

2.   Design a fuzzy controller to determine the wash time of a domestic   20
    washing machine. Assume that the inputs are dirt and grease on clothes.
    Use three descriptors for each input variable and five descriptors for
    the output variable. Device a set of rules for control action and
    defuzzification. The design should be supported by figures wherever
    possible. Clearly indicate that if the clothes are soiled to a larger degree
    the wash time required will be more.

3.   A) What is learning? Compare different learning rules.   10
    B) Explain error back propagation training algorithm with the help of a   10
     flowchart.

4.   A) Implement the perceptron rule training using $f(net) = sgn(net)$, $c=1$, and the 12
    following data specifying the initial weights $W1$, and the two training pairs.
     $W1 = [0, 1, 0]^t$
     $X1 = [2, 1, -1]^t$ $d1 = -1$;
     $X2 = [0, -1, -1]^t$ $d2 = 1$;
    Repeat the training sequence until two correct responses in a row are achieved.
    B) Explain Hebbian learning rule.   08

5. A) Describe the basic Hopfield model and give the theory of energy   10
     minimization in auto-associative Hopfield network.
   B) Explain the architecture of Bidirectional associative memory. How is   10
     storage and retrieval performed in BAM?

6. A) Explain with examples four different defuzzification methods.   10
   B) Explain RBF network and give the comparison between RBF and MLP.   10

7.   Write notes on **any two** of the following :–   20
    A) Fuzzy Relations
    B) Medical Diagnosis using neural networks
    C) Character recognition using neural networks
    D) FKBC (Fuzzy Knowledge Based Controller)

Con. 3826–11.　　　　(OLD COURSE)　　　　**RK–3684**

(3 Hours)　　　　[Total Marks : 100

N.B. : (1) Question No. **1** is **compulsory**.
　　　　(2) Attempt any **four** questions out of remaining **six** questions.

1. (a) Define automation. Differentiate between Soft and Hard automation.　　5
   (b) Differentiate between NC and CNC machines.　　5
   (c) Explain the role of Tool configuration vector in Inverse Kinematics.　　5
   (d) Explain perspective transformation.　　5

2. (a) Classify robot as per drive technology and state advantages and drawbacks　10
       of each.
   (b) State the algorithmic steps of D-H Algorithm.　　10

3. (a) Develope step by step arm equation of 5-axis RHINO XR3 robot.　　10
   (b) Differentiate between straight line motion and interpolated motion. Explain　10
       in brief a method to achieve straight line motion.

4. (a) Differentiate between Path and Trajectory. Explain in brief PnP trajectory.　10
   (b) State and explain specifications of robot.　　10

5. (a) Perform I.K. solution for 4 axis SCARA robot.　　10
   (b) Explain the process of linear interpolation with parabolic blends.　　10

6. (a) Explain how camera is calibrated over the work cell. Assume that orientation　10
       of the camera is fixed.
   (b) Explain quantitatively how Generalized Voronai Diagram (GVD) is constructed.　10

7. Write short notes on :–　　20
       (a) Shape analysis
       (b) Workspace fixtures
       (c) Screw transformations
       (d) Gross motion planning.

****