

Jaypee University of Information Technology

Waknaghat

Test 3 May 2008

M. Tech. IV Sem. (IMCA)

Subject Code: MA-----

Time : 1 Hr. 30 min.

Subject Name: Linear Algebra

M.M.: 30

1. Show that the vectors $\alpha_1 = (1, 0, -1)$, $\alpha_2 = (1, 2, 1)$, $\alpha_3 = (0, -3, 2)$ form a basis for \mathbb{R}^3 . Express each of the standard basis vectors as a linear combination of $\alpha_1, \alpha_2, \alpha_3$. (5)

2. Every n-dimensional vector space $V(F)$ is isomorphic to $V_n(F)$. (5)

3. Find the dual basis of the basis set

$$B = \{(1, -1, 3), (0, 1, -1), (0, 3, -2)\} \quad (5)$$

for $V_3(\mathbb{R})$.

4. Is the matrix

$$\begin{bmatrix} 3 & 1 & -1 \\ 2 & 2 & -1 \\ 2 & 2 & 0 \end{bmatrix} \quad (5)$$

similar over the field \mathbb{R} to a diagonal matrix? Is A similar over the field \mathbb{C} to a diagonal matrix?

5. a) If α is a characteristic vector of T , then α cannot correspond to more than one characteristic values of T . (2.5)

b) Let T be a linear operator on a finite dimensional vector space V and let c be a characteristic value of T . Show that the characteristic space of c i.e., W_c is invariant under T . (2.5)

6. Apply the Gram-Schmidt process to the vectors $\beta_1 = (1, 0, 1)$, $\beta_2 = (1, 0, -1)$, $\beta_3 = (0, 3, 4)$ to obtain an orthonormal basis for $V_3(\mathbb{R})$ with the standard inner product. (5)

*** **

4-17 p.

Jaypee University of Information Technology

PhD/M Tech 2nd Year(CSE/IT)

May 2008

Course Code: 07B81CI416

Time : 90 Min

Test T3: Network Management

Marks : 30

Note: 1. Attempt all questions

-
- Q 1. (a) [2 marks] Differentiate between network management and system management.
(b) [3 marks] Describe the SMI in the information model of SNMPv2
- Q 2. (a) [3 marks] Explain the security model for SNMPv3.
(b) [2 marks] Explain the advantages of using RMONs in the NMS.
- Q 3. (a) [2 marks] Explain the MIB for management of ATM networks.
(b) [3 marks] Explain the architecture of the ADSL access network as per the ADSL Forum's system reference model.
- Q 4. (a) [3 marks] Explain information architecture of TMN.
(b) [2 marks] Explain commonly used traffic monitoring tools.
- Q 5. (a) [2 marks] What do you understand from fault management?
(b) [3 marks] Explain important performance metrics for network management.
- Q 6. (a) [3 marks] Explain Desktop Management Interface(DMI) standard as defined by Desktop Management Task Force(DMTF).
(b) [2 marks] Explain network management functions.

5-17p.
10

Jaypee University of Information Technology
PhD/M Tech 2nd Year(CSE/IT)
May 2008

Course Code: 07B81CI416

Time : 90 Min Test T3: Network Management Marks : 30

Note: 1. Attempt all questions

- Q 1. (a) [2 marks] Differentiate between network management and system management.
(b) [3 marks] Describe the SMI in the information model of SNMPv2
- Q 2. (a) [3 marks] Explain the security model for SNMPv3.
(b) [2 marks] Explain the advantages of using RMONs in the NMS.
- Q 3. (a) [2 marks] Explain the MIB for management of ATM networks.
(b) [3 marks] Explain the architecture of the ADSL access network as per the ADSL Forum's system reference model.
- Q 4. (a) [3 marks] Explain information architecture of TMN.
(b) [2 marks] Explain commonly used traffic monitoring tools.
- Q 5. (a) [2 marks] What do you understand from fault management?
(b) [3 marks] Explain important performance metrics for network management.
- Q 6. (a) [3 marks] Explain Desktop Management Interface(DMI) standard as defined by Desktop Management Task Force(DMTF).
(b) [2 marks] Explain network management functions.

5
10-17p.