Subject: DIGITAL SIGNAL PROCESSING (DSP)  Date: 24/10/2016
Marks: 20 MARKS  Duration: 01 Hr
Class: BE - COMPUTERS  Sem: VII  Branch: COMPUTER

<table>
<thead>
<tr>
<th>Course Outcome</th>
<th>CO1</th>
<th>CO2</th>
<th>CO3</th>
<th>CO4</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>35%</td>
<td>50%</td>
<td>25%</td>
<td>35%</td>
</tr>
</tbody>
</table>

Q. 1  Attempt any 5 of the following:

a) Circular shifting of \{1 2 3 4\} by a delay of 4 samples gives \{4 3 2 1\}.  Mark: 2M  CO1

b) The replot() function allows multiple graphs in one window.  Mark: 2M  CO2
c) Sonars used in space exploration are an application of correlation.  Mark: 2M  CO2
d) The sample at n=0 has the lowest value in an auto correlation sequence.  Mark: 2M  CO2
e) The reduction in marks due to excessive social media interaction is an example of positive correlation.  Mark: 2M  CO2
f) The MAC command performs Machine and Control function of a DSP Processor.  Mark: 2M  CO4

Q. 2  a) Using suitable diagrams explain the process of Sampling and Quantization.  Mark: 5M  CO1

OR

b) Explain any one Real time application of DSP.  Mark: 5M  CO4

Q. 3  a) Find the DFT of 8pt sequence using DIT-FFT method.  Mark: 5M  CO3
\[ x(n) = \{ 2, 0, 4, 0, 6, 0, 8, 0 \} \]

OR

b) Explain the Karl Pearson's Coefficient of Correlation with a suitable example.  Mark: 5M  CO2

***************
1. Attending Q1. is compulsory.
2. Compulsory attempt Q2 and Q3.
3. Attempt any one from Q2 and Q3.

Q1. Attempt any 5 from following. (2 X 5)
   a) List and explain different modes(types) of DOS Attack?
   b) Differentiate between worms, virus and Trojans.

Define terms:
   c) Packet sniffing
   d) Packet spoofing
   e) SQL injection
   f) Session Hijacking

Q2. Write a Short Note on : Attempt any 1 (1 X 5)
   a) Kerberos
   b) IPsec Protocols for security

Q3. Attempt any 1 (1 X 5)
   a) What is firewall? Explain its 2 types.
   b) Short note on IDS explain its types too.
Instructions: Assume suitable data wherever required.

1) Attempt any five out of six: (2 marks each) 10
   a. What is knowledge.
   b. Explain First Order Logic.
   c. Alpha-Beta pruning reduces the size of game tree. State true or false with justification.
   d. Hill climbing suffers with local maxima problem. State whether true or false with justification.
   e. Implication \( p \Rightarrow q \) is equivalent to \( \neg p \lor q \). State whether true or false with justification.
   f. Min-Max algorithm is for two player games. State whether true or false with justification.

2) Attempt any one of the following:
   a. Consider the following axioms.
      1. All people who are graduating are happy.
      2. All happy people smile.
      3. Someone is graduating.
      Convert these axioms in FOL and prove that “Is someone smiling?”.
   b. What are the problems that occur in Hill climbing, illustrate with an example.

3) Attempt any one of the following:
   a. Explain Min-Max and Alpha-Beta pruning algorithm with an example.
   b. Explain decision tree learning with an example. What are decision rules.
Q.1 Each question carry 2 marks
a) True or False: Extended ERP is the higher version of ERP
b) True or False: Implementation cost of Cloud ERP is higher
c) True or False: BPR is the constant refinement of an organization based on changing needs.
d) What is the use of mathematical modeling in SCM?
e) What is SCOR model?
f) List the IT solutions used in SCM?

2. a) What is cloud ERP? What are the benefits of Cloud ERP? 05

OR

2. b) What are the major drivers for SCM? 05

3. a) Explain with the help of example transportation problem in SCM 05

OR

3 b) Write a short note on CRM 05