

DAYANANDA SAGAR COLLEGE OF ENGINEERING
(An Autonomous Institute Affiliated to VTU, Belagavi)
 ShavigeMalleshwara Hills, Kumaraswamy Layout, Bengaluru-560078
Department of Telecommunication Engineering
Online Continuous Internal Assessment Test - II

Course: **MIMO Technologies**
 Course Code: **17TE7DCMTN**
 Semester: **VII - 'A' & 'B'**

Date: **10/11/2020**
 Maximum marks: **50**
 Duration: **90 Min**

Note: Answer 5 full questions.		Marks
1	<p>a) The use of multiple transmit antennas to achieve reliability is ----- i) Receive Diversity ii) Transmit Diversity iii) Flexible Diversity iv) Spatial Multiplexing</p> <p>b) Receive diversity is that each element in the receive array receives an independent copy of the----- i) Interference ii) Different Signal iii) Same Signal iv) Dispersion</p> <p>c) In Receive Diversity probability that all signals are in deep fade simultaneously is then significantly -----. i) Remains same ii) Fluctuates iii) Increased iv) Reduced</p> <p>d) Base station antenna comprises multiple elements while the mobile device has only one or two, why? i) Space considerations ii) Bandwidth iii) Interference iv) No Reason</p> <p>e) Multiple transmit/receive antennas should allow us to transmit ----- i) Data Slower ii) Data faster iii) Same data rate iv) Less data rate</p> <p>f) The capacity of the channel is defined as the maximum possible mutual information between the input (x) and -----. i) CSI ii) input(x) iii) output (y) iv) CQI</p> <p>g) Max Capacity is calculated by maximization of the probability distribution of the ----- i) Input $f_x(x)$ ii) output $f_y(y)$ iii) both Input(x) & output (y) iv) $f(y)/f(x)$</p> <p>h) Concatenated codes are ---- Compression Code ii) error-correcting codes iii) Source Code iv) none</p> <p>i) Concatenated codes are constructed from-----Codes i) 2 or more ii) single code iii) hundreds of iv) none</p> <p>j) Concatenated codes are having ----- performance and reasonable complexity Bad ii) Worst iii) Good iv) none</p>	1x10
2	Elaborate Alamouti Code with 2 transmit antenna and Nr Receiving Antenna	10

3	Explain and Brief about Space-Time Trellis Code.	10
4	Evaluate Decoding of Linear Orthogonal Designs.	10
	(OR)	
5	Hypothesize Performance Analysis of Space-Time Block Codes	10
6.a	What are Space-Time Code Design Principles?	05
6.b	List the Comparison of Space-Time Block and Trellis Codes.	05
	(OR)	
7	Demonstrate VBLAST/HBLAST/SCBLAST encoder features with diagram.	10

Faculty: Dr. SAYED ABDULHAYAN

No. of copies: 85