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## Question Paper Code: 40967

## B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Sixth Semester

## Electrical and Electronics Engineering EC6651 – COMMUNICATION ENGINEERING

(Common to : Electronics and Instrumentation Engineering, Instrumentation and Control Engineering)
(Regulations 2013)

Time: Three Hours

Maximum: 100 Marks

## Answer ALL questions

PART - A

 $(10\times2=20 \text{ Marks})$ 

- 1. Define Quantization error.
- 2. Compare Narrow band FM and Wideband FM.
- 3. What is meant by aliasing?
- 4. Analyse, why FSK is preferred over ASK.
- 5. List the type of characters used in data communication mode.
- 6. Give the significance of AMI code.
- 7. What is meant by near-far problem?
  - 8. Give the working principle of TDMA.
  - 9. Define Apogee, Perigee and Geocenter.
- 10. Give the advantage of fiber optics system.

PART – B

 $(5\times13=65 \text{ Marks})$ 

11. a) i) Compare between FM and AM.

(4)

ii) Explain in details about FM Modulation.

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(OR

b) Discuss in details about the working of a SSB transmitter and receiver.

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a) Describe in details about the or	peration of PSK and MSK	with neat diagram.
(OR)		
b) Discuss the details about GMS	K with neat diagram.	
a) State and prove Shannon's nois	seless coding theorem.	
(OR)		
b) Describe the concept of source of	coding theorem.	
a) Describe the frequency division	n multiple access techniqu	ies.
(OR)		
b) Describe the time division mult	tiple access techniques.	
a) i) Explain about satellite comm	nunication and its types.	(8)
ii) Write short notes on cellular	· CDMA.	(5)
(OR)		
b) What is optical fiber? Explain	the details about the opti	cal detectors.
	PART – C	(1×15=15 Marks)
a) Propose and discuss a SCADA	scheme for a typical powe	er distribution system.
(OR)		·
AWGN channel. The prior pr	obabilities for the bits ar	$e P(a_m = 1) = \frac{1}{3}$ and
$P(a_m = -1) = \frac{2}{3}$ . Determin	ne the average threshold	at the detector and
average probability of error.	and the second	(10)
ii) Write a technical note on ap	plications of Data Comm	unication. (5)
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	<ul> <li>a) Describe in details about the operation (OR)</li> <li>b) Discuss the details about GMS</li> <li>a) State and prove Shannon's noise (OR)</li> <li>b) Describe the concept of source of (OR)</li> <li>b) Describe the frequency division (OR)</li> <li>b) Describe the time division multiple (OR)</li> <li>b) Describe the time division multiple (OR)</li> <li>b) What is obtained fiber? Explain</li> <li>a) Propose and discuss a SCADA (OR)</li> <li>b) i) A binary PAM communicated AWGN channel. The prior property of the prior property of the prior property of the prior of</li></ul>	a) Describe in details about the operation of PSK and MSK (OR) b) Discuss the details about GMSK with neat diagram. a) State and prove Shannon's noiseless coding theorem. (OR) b) Describe the concept of source coding theorem. (OR) b) Describe the frequency division multiple access techniques (OR) b) Describe the time division multiple access techniques. a) i) Explain about satellite communication and its types. ii) Write short notes on cellular CDMA. (OR) b) What is optical fiber? Explain the details about the optimal PART - C a) Propose and discuss a SCADA scheme for a typical power (OR) b) i) A binary PAM communication system is used to the AWGN channel. The prior probabilities for the bits are P(a <sub>m</sub> = -1) = \frac{2}{3}\$. Determine the average threshold average probability of error. ii) Write a technical note on applications of Data Communication applications of Data Communic