Student Exam No._____

GANPAT UNIVERSITY

**B. Tech. Semester: VI Electronics and Communication Engineering**

**Regular Examination April-June 2017**

**Digital Communication (2EC 603)**

**Time:** 3 Hours **Total Marks: 60**

**Instructions:** 1 Attempt all questions.
2 Answer **each** section in **separate** answer books
3 Figure to the right indicates **full** marks.
4 Standard terms and notation are used and **assume** data, if necessary

## Section - I

| | | | |
|---|---|---|---|
| **Que. – 1** | **(A)** | What is adaptive delta modulation? Why it is named so? | **4** |
| | **(B)** | Explain basic blocks of PCM. | **6** |

OR

| | | | |
|---|---|---|---|
| **Que. – 1** | **(A)** | State and prove interpolation formula in digital communication. | **7** |
| | **(B)** | Why delta modulation is named so? | **3** |
| **Que. – 2** | **(A)** | Compare ASK and FSK in time as well as in frequency domain. | **5** |
| | **(B)** | Write short note on QPSK and 16 QAM. | **5** |

OR

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|---|---|---|---|
| **Que. – 2** | **(A)** | What is AMI line coding? How it is different from other line codes?. | **5** |
| | **(B)** | How regenerative repeater is different from amplifier? | **5** |
| **Que. – 3** | **(A)** | What is baseband signal. | **2** |
| | **(B)** | Give two definitions of term Orthogonality. | **4** |
| | **(C)** | Write short notes on signal as vector. | **4** |

## Section – II

| | | | |
|---|---|---|---|
| **Que. – 4** | **(A)** | Define Probability, Experiment, Sample space and Event. | 5 |
| | **(B)** | Two dice are thrown simultaneously. Find the probability of getting a sum of 6. | 5 |

OR

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|---|---|---|---|
| **Que. – 4** | **(A)** | What is PDF? Give its properties. | 5 |
| | **(B)** | A box contain 4 white and 3 black balls. Three balls are drawn from the box in succession. Find the probability that the first two balls are white and third is black. | 5 |

| | | | |
|---|---|---|---|
| **Que. – 5** | **(A)** | Write short notes on Gaussian distribution. | 5 |
| | **(B)** | Give briefing about Geometric distribution | 5 |

**OR**

| | | | |
|---|---|---|---|
| **Que. – 5** | **(A)** | How to find the variance of given probability distribution? | 7 |
| | (B) | How to find the mode of given probability distribution? | 3 |

| | | | |
|---|---|---|---|
| **Que. – 6** | **(A)** | What do you understand by deterministic signal and how it is different from random signal? | 3 |
| | **(B)** | Two weak students in programming write a program. Their chance of writing a program correctly are (1/8) and (1/12). Now, if the probability of making a common error is (1/10001) and they get the same answerer, then find the probability that heir program is correct. | 7 |



END OF PAPER