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| **Name of the Faculty : Sh.Virender Sindhu** |
| **Discipline : Electronics and Communication Engg.**  |
| **Semester : Vth** |
| **Subject : Digital Communication** |
| **Lesson Plan Duration : September-Januarary 2023** |
| **Work Load (Lecture/ Practical) per week (in hours):** 03 HOURS (Lecture) 03 Hours per Group (PRACTICAL) |
|
| **Week** | **Theory** | **Practical** |
| **Lecture day** | **Topic (including assignment/ test)** | **Topic** |
| **1st** | **1** |  Introduction to Basic block diagram of digital and data communication systems | Observe wave forms at input and output of pulse code modulator with CRO. |
| **2** | Their comparison with analog communication systems. |
| **3** | REVISION |
| **2nd** | **4** | Sampling theorem and its basic concept. | Observe wave forms at input and output of pulse code modulator with CRO. |
| **5** |   Introduction to PAM, PPM, PWM |
| **6** |   Introduction to PAM, PPM, PWM |
| **3rd** | **7** |  Quantization and error of Quantization | Transmission of data using MODEM. |
| **8** | PCM, DPCM, their advantage and disadvantage |
| **9** | PCM, DPCM, their advantage and disadvantage |
| **4th** | **10** | DELTA and ADAPTIVE DELTA Modulation concept of COMPANDING | Transmission of data using MODEM. |
| **11** | DELTA and ADAPTIVE DELTA Modulation concept of COMPANDING |
| **12** |  Frequency hopping spread spectrum technique |
| **5th** | **13** | REVISION | Observe wave forms at input and output of QPSK modulators |
| **14** | Basic block diagram and principle of working of Amplitude shift keying (ASK) |
| **15** | Interrupted continuous wave (ICW) |
| **6th** | **16** | **1st Sessional Test** | Observe wave forms at input and output of QPSK modulators |
| **17** | Frequency Shift keying (FSK) |
| **18** | Quadrature Phase Shift Keying(QPSK) |
| **7th** | **19** | Phase shift keying (PSK), | Observe wave forms at input and output of PSK modulators |
| **20** |  two tone modulation |
| **21** | REVISION |
| **8th** | **22** | REVISION | Observe wave forms at input and output of PSK modulators |
| **23** | Characteristics/working of data transmission circuits |
| **24** | Characteristics/working of data transmission circuits |
| **9th** | **25** | Bandwidth requirements,  | Observe the working of space and time switching circuit. |
| **26** | Data transmission speeds |
| **27** | Noise, cross talk |
| **10th** | **28** | Echo suppressors | Observe the working of space and time switching circuit. |
| **29** | Distortion, equalizers |
| **30** | REVISION |
| **11th** | **31** | REVISION | Revision & Viva |
| **32** | **2nd Sessional Test** |
| **33** | Need and function of modems |
| **12th** | **34** | Need and function of modems | Revision & Viva |
| **35** | Mode of modems operation (low speed, medium speed and high speed  |
| **36** | Modem interconnection |
| **13th** | **37** | Modem data transmission speed,  | Revision & Viva |
| **38** | Modem modulation method. |
| **39** | Modem modulation method. |
| **14th** | **40** | Space and time switching:  | Revision & Viva |
| **41** | Working principle of STS and TST switches.  |
| **42** | Working principle of STS and TST switches.  |
| **15th** | **43** | REVISION | Revision & Viva |
| **44** | REVISION |
| **45** | REVISION |
|   | **46** | REVISION | Revision & Viva |
| **47** | REVISION |
| **48** | **3rd Sessional Test** |