Program: BE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester V

Course Code: ECC502 and Course Name: Digital Communication

Time: 1hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

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| Q1.  | Probability is \_\_\_\_\_\_\_ of number of events to total possible outputs. |
| Option A: | sum |
| Option B: | difference |
| Option C: | product |
| Option D:  | ratio |
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| Q2. | Hamming distance between two codewords11010100 and 01011110 |
| Option A: | 2 |
| Option B: | 1 |
| Option C: | 4 |
| Option D: | 3 |
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| Q3. | If the minimum hamming distance is 3 the number errors that can be corrected of a hamming code |
| Option A: | 2 |
| Option B: | 1 |
| Option C: | 3 |
| Option D: | 0 |
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| Q4. | \_\_\_\_\_\_\_\_\_\_ is a nonlinear method of passband data transmission. |
| Option A: | ASK |
| Option B: | FSK |
| Option C: | PSK |
| Option D: | QPSK |
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| Q5. | Which among the following represents the code in which codewords consists of message bits and parity bits separately? |
| Option A: | Block Codes |
| Option B: | Systematic Codes |
| Option C: | Code Rate |
| Option D:  | Hamming Distance |
|  |  |
| Q6. | Maximum signal to noise ratio for Matched filter is \_\_\_\_\_ |
| Option A: | (S/N)0max= 2E/N0 |
| Option B: | (S/N)0max= E/N0 |
| Option C: | (S/N)0max= 2E/2N0 |
| Option D:  | (S/N)0max= E/2N0 |
|  |  |
| Q7.  | The cyclic codes are designed using |
| Option A: | Flipflops |
| Option B: | Multiplexers |
| Option C: | Shift registers without feedback |
| Option D:  | Shift registers with feedback |
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| Q8.  | Rayleigh distribution is a \_\_\_\_\_\_\_\_\_\_ probability distribution. |
| Option A: | continuous |
| Option B: | discontinuous |
| Option C: | discrete |
| Option D:  | digital |
|  |  |
| Q9. | Matched filter may be optimally used only for |
| Option A: | Gaussian noise |
| Option B: | Transit time noise |
| Option C: | Flicker |
| Option D:  | shot noise |
|  |  |
| Q10.  | The technique that may be used to reduce the side band power is |
| Option A: | MSK |
| Option B: | BPSK |
| Option C: | Gaussian minimum shift keying |
| Option D:  | BFSK |
|  |  |
| Q11.  | For decoding in convolution coding, in a code tree |
| Option A: | Diverge upward when a bit is 0 and diverge downward when the bit is 1 |
| Option B: | Diverge downward when a bit is 0 and diverge upward when the bit is 1 |
| Option C: | Diverge left when a bit is 0 and diverge right when the bit is 1 |
| Option D:  | Diverge right when a bit is 0 and diverge left when the bit is 1 |
|  |  |
| Q12.  | ASK is combined with PSK to create hybrid systems such as\_\_\_\_\_\_\_\_\_\_ |
| Option A: | QPSK |
| Option B: | FSK |
| Option C: | QAM |
| Option D: | 8-PSK |
|  |  |
| Q13. | In which waveform logic 1 is represented by half bit wide pulse and logic 0 is represented by absence of pulse? |
| Option A: | Unipolar RZ |
| Option B: | Bipolar RZ |
| Option C: | RZ-AMI |
| Option D: | Manchester |
|  |  |
| Q14.  | The constellation diagram of 16-QAM has \_\_\_\_\_\_ dots. |
| Option A: | 4 |
| Option B: | 8 |
| Option C: | 16 |
| Option D:  | 32 |
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| Q15. | Find the entropy of a given DMS with the probabilities 0.4,0.2,0.2,0.1,0.1 |
| Option A: | 2.121 |
| Option B: | 2.423 |
| Option C: | 2.532 |
| Option D:  | 2.621 |
|  |  |
| Q16.  | MSK is also called as |
| Option A: | M-ary PSK |
| Option B: | BPSK |
| Option C: | FSK |
| Option D:  | QAM |
|  |  |
| Q17. | Mean of a random variable X is given by \_\_\_\_\_\_\_\_\_ |
| Option A: | E(X) |
| Option B: | E(X2) |
| Option C: | E(X2) – (E(X))2 |
| Option D: | (E(X))2 |
|  |  |
| Q18. | Which of the following is not a way to represent convolution code? |
| Option A: | State diagram |
| Option B: | Trellis diagram |
| Option C: | Tree diagram |
| Option D:  | Linear matrix |
|  |  |
| Q19.  | In \_\_\_\_\_\_\_\_, the amplitude of the carrier signal is varied to create signal elements. Both frequency and phase remain constant |
| Option A: | PSK |
| Option B: | ASK |
| Option C: | FSK |
| Option D:  | QAM |
|  |  |
| Q20. | Coherent detector considers \_\_\_\_\_\_\_\_\_\_\_as the most important parameter. |
| Option A: | amplitude |
| Option B: | frequency |
| Option C: | phase |
| Option D: | time |
|  |  |
| Q21. | The capacity of a communication channel with a bandwidth of 4 kHz and 15 SNR is  |
| Option A: | 20kbps |
| Option B: | 16kbps |
| Option C: | 10kbps |
| Option D:  | 8kbps |
|  |  |
| Q22.  | The detector that minimizes the error probability is called as |
| Option A: | Maximum likelihood detector |
| Option B: | Minimum likelihood detector |
| Option C: | Maximum & Minimum likelihood detector |
| Option D:  | Balance detector |
|  |  |
| Q23. | What would be the probability of an event “G” if H denotes its complement, according to the axioms of probability? |
| Option A: |  P(G)=1/P(H) |
| Option B: | P(G)=1-P(H) |
| Option C: | P(G)=1+P(H) |
| Option D:  | P(G)=1\*P(H) |
|  |  |
| Q24.  | In eye –pattern, the \_\_\_\_\_\_\_\_\_\_\_\_of the eye opening defines the interval over which the received wave can be sampled without error from inter symbol interference. |
| Option A: | length |
| Option B: | height |
| Option C: | width |
| Option D:  | area |
|  |  |
| Q25. | The information content in an absolutely certain event is |
| Option A: | 1 |
| Option B: | 0 |
| Option C: | >0 |
| Option D:  | ∞ |