Program: B.E. (ELECTRONIC AND TELECOMMUNICATION)

Curriculum Scheme: Revised 2016 (Choice based)

Examination: Final Year Semester VII

Course Code: ECC701 and Course Name :Microwave Engineering

Time: 1hour Max. Marks: 50

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**SAMPLE MCQ**

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

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| Q1. | Which of the following is used as a high power microwave oscillator? |
| Option A: | Thyratron |
| Option B: | Magnetron |
| Option C: | Klystron |
| Option D: | Reflex-klystron |
|  |  |
| Q2. | When it is desired that short-range targets be clearly seen on a pulsed-radar set, it is important that the receiver and display system have |
| Option A: | A long time constant |
| Option B: | Low-pass filters |
| Option C: | The shortest possible time |
| Option D: | The restricted high-frequency response |
|  |  |
| Q3. | The main frequency determining element of a klystron is |
| Option A: | The repeller voltage |
| Option B: | The accelerating voltage |
| Option C: | Its resonant cavity |
| Option D: | Its mode of operation |
|  |  |
| Q4. | A traveling-wave tube (TWT) amplifies by virtue of |
| Option A: | The absorption of energy by the signal from an electron stream |
| Option B: | The effect of an external magnetic field |
| Option C: | The energy contained the cavity resonators |
| Option D: | The energy liberated form the collector |
|  |  |
| Q5. | For the capacitors used in MMICs, the insulating dielectric films used are: |
| Option A: | Air |
| Option B: | SiO |
| Option C: | Titanium |
| Option D: | GaAs |
|  |  |
| Q6. | The cavity resonator |
| Option A: | Is equivalent to an LC resonant circuit |
| Option B: | In a reflect klystron has its output taken from the reflector plate |
| Option C: | Produces a frequency which is independent of the cavity size. |
| Option D: | Has a low Q factor for narrow operation. |
|  |  |
| Q7. | Which ferrite device can be used instead of a duplexer to isolate a microwave transmitter and receiver when both are connected to the same antenna? |
| Option A: | Isolator |
| Option B: | Magnetron |
| Option C: | Simplex |
| Option D: | Circulator |
|  |  |
| Q8. | In a Gunn diode oscillator, the electron drift velocity was found to be 107 cm/second and the effective length is 20 microns, then the intrinsic frequency is: |
| Option A: | 5 GHz |
| Option B: | 6 GHz |
| Option C: | 4 GHz |
| Option D: | 2 GHz |
|  |  |
| Q9. | The width of depletion region of a varactor diode \_\_\_\_\_\_\_\_with increase in reverse bias voltage. |
| Option A: | Increases |
| Option B: | Decreases |
| Option C: | Remains constant |
| Option D: | becomes zero |
|  |  |
| Q10. | Schwinger reversed phase coupler is a waveguide coupler designed so that the path lengths for the two coupling apertures are the same for\_\_\_\_\_\_\_\_\_ |
| Option A: | Coupled port |
| Option B: | Uncoupled port |
| Option C: | Back port |
| Option D: | Isolated port |
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| Q11. | Under ideal conditions, when a PIN diode is used as a switch, the switch must have \_\_\_\_\_\_\_ insertion loss in the ON state. |
| Option A: | Maximum |
| Option B: | Zero |
| Option C: | Average |
| Option D: | Insertion loss cannot be defined for a switch |
|  |  |
| Q12. | If the equivalent impedance of the resonator at resonance is 12.5 Ω and the characteristic impedance of the feed line is 50 Ω, then the coupling coefficient is: |
| Option A: | 0.25 |
| Option B: | 0.5 |
| Option C: | 0.75 |
| Option D: | 1 |
|  |  |
| Q13. | IMPATT stands for: |
| Option A: | impact avalanche and transit time |
| Option B: | induced mobility at transmission time |
| Option C: | implied power at transmission terminal |
| Option D: | Impact power transit terminal |
|  |  |
| Q14. | The device commonly used in satellite communications is the: |
| Option A: | TWT |
| Option B: | klystron |
| Option C: | magnetron |
| Option D: | YIG |
|  |  |
| Q15. | The input signal is introduced into the traveling-wave tube at the |
| Option A: | Cathode |
| Option B: | Anode |
| Option C: | Cathode end of the helix |
| Option D: | Collector end of the helix |
|  |  |
| Q16. | Low-power radar transmitters and receivers use which component? |
| Option A: | GaAs FET |
| Option B: | Magnetron |
| Option C: | Gunn diode |
| Option D: | Klystron |
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| Q17. | A waveguide is also a |
| Option A: | Low pass filter |
| Option B: | High pass filter |
| Option C: | Band pass filter |
| Option D: | Band stop filter |
|  |  |
| Q18. | The number of semiconductor layers in a TRAPATT diode is: |
| Option A: | Two |
| Option B: | Three |
| Option C: | Four |
| Option D: | One |
|  |  |
| Q19. | HEMT fabricated using GaN and aluminum gallium nitride on a silicon substrate can be used in : |
| Option A: | High power transmitters |
| Option B: | High power receivers |
| Option C: | RADAR |
| Option D: | Smart antennas |
|  |  |
| Q20. | \_\_\_\_\_\_\_\_\_\_ is an important consideration for a hybrid integrated circuit. |
| Option A: | material selection |
| Option B: | processing units |
| Option C: | design complexity |
| Option D: | active sources |
|  |  |
| Q21. | Advantage of HJT over BJT is that it has: |
| Option A: | higher gain |
| Option B: | high frequency of operation |
| Option C: | sophisticated construction |
| Option D: | Low frequency |
|  |  |
| Q22. | A PIN diode can be used in either a series or a shunt configuration to form a \_\_\_\_\_\_\_\_\_\_ |
| Option A: | Single pole single throw switch |
| Option B: | Single pole double throw switch |
| Option C: | Amplifier |
| Option D: | Oscillator |
|  |  |
| Q23. | A major disadvantage of klystron amplifier is: |
| Option A: | Low power gain |
| Option B: | Low bandwidth |
| Option C: | High source power |
| Option D: | Design complexity |
|  |  |
| Q24. | The substrate of an MMIC must be a \_\_\_\_\_\_\_\_\_\_\_\_\_ to accommodate the fabrication of all the type of devices. |
| Option A: | Semiconductor |
| Option B: | Insulator |
| Option C: | Partial conductors |
| Option D: | Metals operable at high frequencies |
|  |  |
| Q25. | Progress in \_\_\_\_\_\_\_\_ and other related semiconductors material processing led to the feasibility of monolithic microwave integrated circuits. |
| Option A: | GaAs |
| Option B: | Silicon |
| Option C: | Germanium |
| Option D: | GaAlAs |