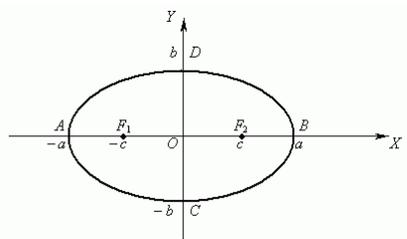
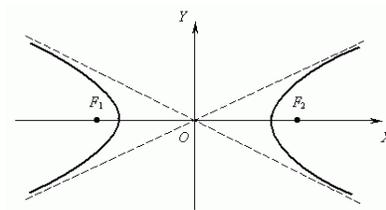


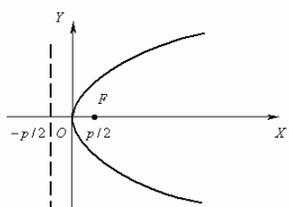
Q.1: Which of the following is a hyperbola ?



a.



c.



b.

d. None of the above

Q.2: Integrating $\int \frac{\ln\left(\frac{1}{x}\right)}{x^2} dx$ will result in

- a. $\frac{1}{x} \ln\left(\frac{1}{x}\right) - \frac{1}{x} + c$
- b. $\frac{1}{x} + c$
- c. $-\left(\frac{1}{x} \ln\left(\frac{1}{x}\right) - \frac{1}{x}\right) + c$
- d. None of the above

Q.3: An $n \times n$ matrix is said to be symmetric if;

- a. If it is equal to its transpose
- b. If its determinant is equal to zero
- c. If it is of 2nd order
- d. None of the above



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Q.4: Mathematically, what is a differential?

- a. A technique used for mathematical modeling.
- b. A method of directly relating how changes in an independent variable affect changes in a dependent variable.
- c. A method of directly relating how changes in a dependent variable affect changes in an independent variable.

d. None of the above

Q.5: The maximum current will pass through

- a. Resistance
- b. Inductance
- c. Capacitance
- d. None of above

Q.6: An element which consumes energy instead of storing in it is

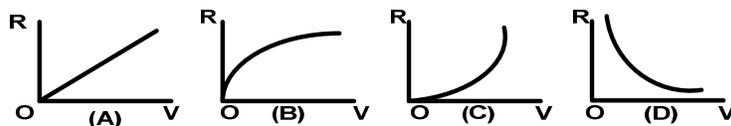
- a. Resistor
- b. Inductor
- c. Capacitor
- d. Conductor

Q.7: A 1000W heater is rated to operate at a direct current (DC) of 10A. If the heater is supplied alternating current (AC) for producing the same quantity of heat the value of current should be

- a. $i_{av}=10A$
- b. $I_{rms}=10A$
- c. $I_{peak}=10A$
- d. $I_{rms}=10\sqrt{2}A$

Q.8: A fixed resistance 'R' is connected across a dc voltage source. If the voltage is gradually and uniformly increased, the relationship between V and R is correctly represented in which group

- a. Fig(A)
- b. Fig(B)
- c. Fig(C)
- d. Fig(D)



Q.9: The effects due to electric current are:

- I. Magnetic effect
- II. Heating effect
- III. Luminous effect

Application working on which effect can be used on AC as well as DC supply?



- a. I only
- b. II only
- c. II and III only
- d. I, II only

Q.10: The root locus of a unity feed-back system is shown in fig. The open loop transfer

function is given by:

- a. $k/s(s+1)(s+2)$
- b. $k(s+1)/s(s+2)$
- c. $k(s+2) / s(s+1)$
- d. $ks / (s+1) (s+2)$

Q.11: A certain common-emitter amplifier has a voltage gain of 100. If the emitter bypass capacitor is removed.

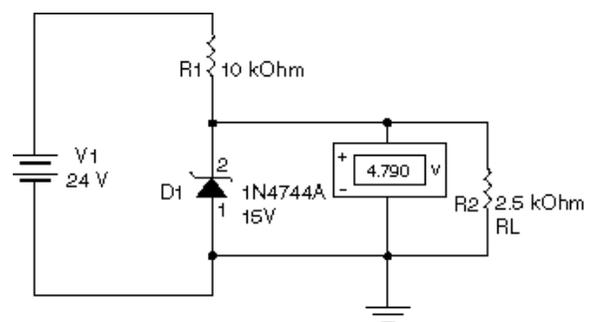
- a. The circuit will become unstable
- b. The voltage gain will decrease
- c. The voltage gain will increase
- d. The circuit will become stable

Q.12: A Darlington transistor connection provides a transistor having a very large

- a. Current gain
- b. Voltage gain
- c. Impedance gain
- d. Impedance matching gain

Q.13: What is wrong with this circuit?

- a. The zener is open
- b. The zener is shorted
- c. Nothing
- d. Not enough data



Q.14: An oscillator that uses a tapped coil to obtain the feedback is called:

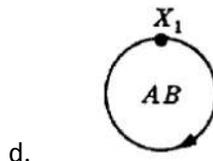
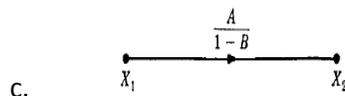
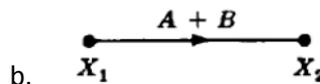
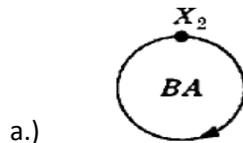
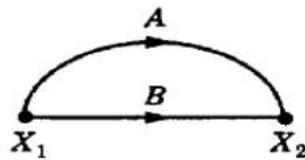
- a. A Hartley circuit
- b. A Pierce circuit

- c. A multivibrator
- d. A negative feedback circuit

Q.15: If the output filter capacitor in a power supply actually had a value twice its stated value, which of the following symptoms would be found?

- a. The output voltage would be doubled and a small improvement in the ripple voltage would be detected.
- b. The ripple voltage would be half of what is expected and a small increase in the output voltage would be detected.
- c. The output and ripple voltage would be greater than expected.
- d. The output and ripple voltage would be less than expected.

Q.16: What is the simplified version of the signal flow graph represented below?



Q.20: Frequency is inherently a physical quantity with characteristics.

- a. Positive
- b. negative
- c. both a & b
- d. none of above

Q.21: If $x(n) = \{1, 2, 5, 7, 0, 1\}$ then its region of convergence (ROC) will be:

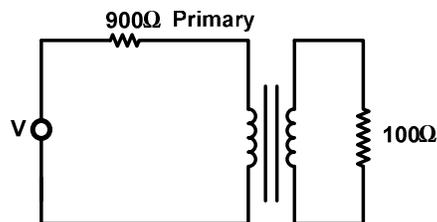
- a. Entire plane
- b. Entire plane except $Z=0$
- c. Entire plane except $Z=0$ and $Z= \infty$
- d. None of the above

Q.22: Which losses in a transformer varies significantly with load

- a. Hysteresis losses
- b. Eddy current losses
- c. Copper losses
- d. Core losses

Q.23: Consider the circuit shown in the given figure. For maximum power transfer to the load, the primary to secondary turn's ratio must be

- a. 9 : 1
- b. 3 : 1
- c. 1 : 3
- d. 1 : 9



Q.24: A lamp of 100W at 200V is supplied current at 100 volts. It will be equivalent to the lamp of:

- a. 50W
- b. 40W
- c. 25W
- d. 10W

Q.25: The CPU structure contains:

- a. Cache, ALU, Control Unit and Control Memory
- b. System Bus, ALU, Control Unit and Registers
- c. Memory, ALU, Control Unit and Cache
- d. Registers, ALU, Internal CPU Interconnection and Control Unit

Q.26: Clock Speed of which Intel microprocessor is 3 GHz?

- a. Core 2 Duo
- b. Core 2 Quad
- c. Pentium 4
- d. Pentium III

Q.27: Normally, the FPGA resources are used less than 70% because:

- a. Routing becomes excessively complicated
- b. Power issues
- c. Clock frequency
- d. Simulation time increases

Q.28 In which layer Telnet and FTP works?

- a. Application
- b. Session
- c. Network
- d. Physical

Q.29: As we know when there is a joint in optical fiber then there will be some loss then this loss be minimized by

- a. Using index matching fluid in the gap
- b. Making V-grooved splicing
- c. Both (a) and (b)
- d. Making carefully polishing

Q.30: Fast fading occurs if the channel _____ changes rapidly within the symbol duration.

- a. Bandwidth
- b. Frequency



- c. Impulse response
- d. None of the above

Answers:

- 1. c
- 2. c
- 3. a
- 4. c
- 5. c
- 6. a
- 7. b
- 8. a
- 9. c
- 10. a
- 11. b
- 12. a
- 13. a
- 14. a
- 15. b
- 16. b
- 17. c
- 18. a
- 19. c
- 20. a
- 21. c
- 22. c
- 23. a
- 24. c
- 25. d
- 26. b
- 27. a
- 28. a
- 29. a
- 30. c



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