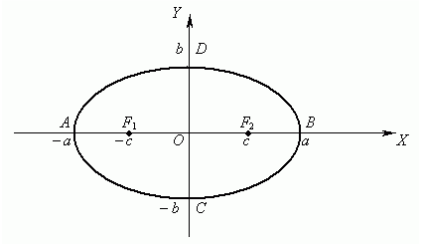
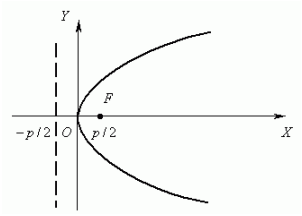
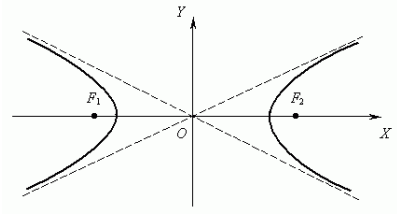
Q.1: Which of the following is a hyperbola ?

a. 

b. 

c. 

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

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

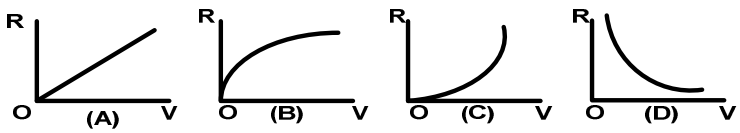
a. Resistor
b. Inductor
c. Capacitor
d. Conductor

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. Iav=10A
b. Irms=10A
c. Ipeak=10A
d. Irms=$10\sqrt{2}$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.

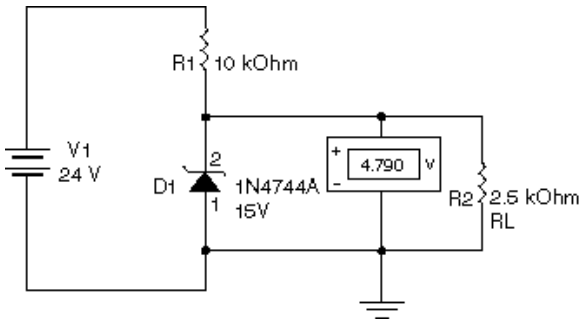
a. The circuit will become unstable
b. The voltage gain will decrease
c. The voltage gain will increase
d. The circuit will become stable

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?

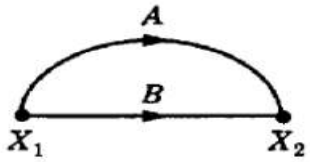
a. The output voltage would be doubled and a small improvement in the ripple voltage would be detected.

b. The ripple voltage would be half of what is expected and a small increase in the output voltage would be detected.

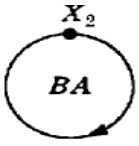
c. The output and ripple voltage would be greater than expected.

d. The output and ripple voltage would be less than expected.

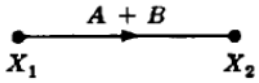
Q.16: What is the simplified version of the signal flow graph represented below?



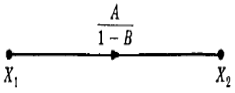
a.)



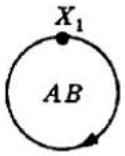
b.



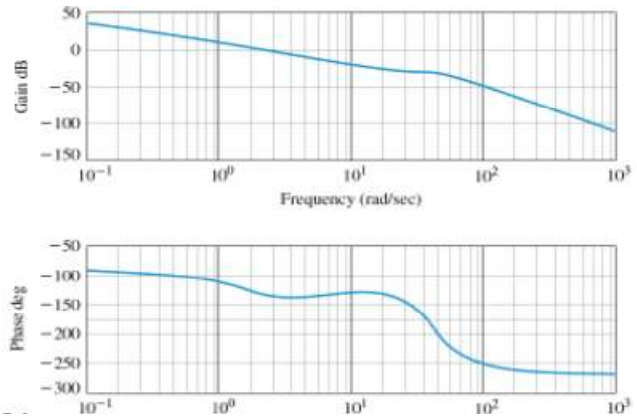
c.



d.



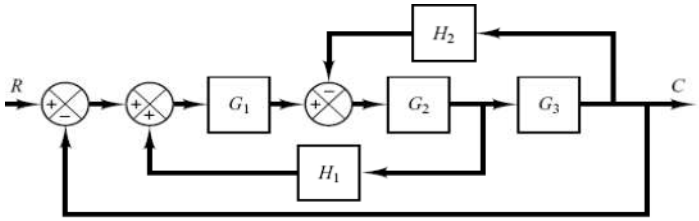
Q.17: Consider the Bode Plot of a system shown below. Find the Gain Margin?



a. 50 b. 20

c. 30 d. 10

Q.18: Consider a control system shown below. Its simplified model will be?



a. $R \rightarrow \dfrac{G_1G_2G_3}{1 - G_1G_2H_1 + G_2G_3H_2 + G_1G_2G_3} \rightarrow C$

b. $R \rightarrow \dfrac{G_1G_2G_3}{1 - G_1G_3H_1 + G_2G_3H_2 + G_1G_2G_3} \rightarrow C$

c. $R \rightarrow \dfrac{G_1G_2G_3}{1 - G_1G_2H_1 + G_1G_3H_2 + G_1G_2G_3} \rightarrow C$

d. None of the above

Q.19: The spectrum of discrete-time Fourier transform will be:

a. Periodic and discrete
b. Aperiodic and continuous
c. Periodic and continuous
d. Aperiodic and discrete

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:

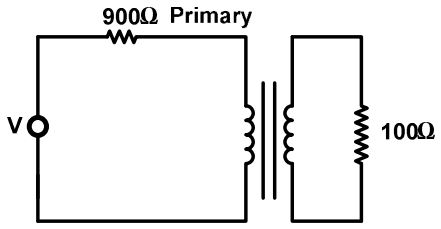
a. Entire plane
b. Entire plane except Z=0
c. Entire plane except Z=0 and Z= ∞
d. None of the above

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: Chock 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