

1. matched pair of transistors is particularly useful for
  - A) Differential amplifier
  - B) High gain amplifier
  - C) High input impedance amplifier
  - D) Low output impedance amplifier
  
2. Magnetic flux density can be measured by using
  - A) ,Q, meter
  - B) AC voltmeter
  - C) Hall probe
  - D) Energy meter
  
3. In closed loop type of A/D conversion the fastest technique is :
  - A) Successive Approximation
  - B) Flash
  - C) Dual slope integration
  - D) Counter-ramp
  
4. When bearing life L10 represents (bearings 10% survive, bearings 10% fails, none )
  
5. For welding high carbon steels which type of flame is used (oxidizing, carburizing, neutral, none)
  
6. Arrange the following cutting tools in decreasing order of machining hardness...Ceramics
  
7. When P1 and P2 are the loads acting on bearings with life L1 and L2 then  $L1/L2=?$   
 $L1/L2=\{P2/P1\}^{10/3}$
  
8. Product simplification does not mean? (Product characterization)
  
9. Which of the following process has the most scope in manufacturing? CAD/CAM, CAM, CIM, All the above.
  
10. Rankine cycle efficiency for same parameters increases mostly with\_(reheat, regeneration, super heating )
  
11. Ericson cycle with all reversible processes assume\_(carnot cycle, stirling, brayton
  
12. Air delivery tank at outlet of reciprocating compressor is provided for\_ (provide constant pressure, avoid cavitation, )
  
13. High speed centrifugal pump has \_? (vanes faces in forward direction side, backward, radial vanes)
  
14. Thermal efficiency in decreasing order\_? (Otto cycle>dual cycle>diesel cycle)
  
15. Connect two 10 resistors in series, then connect two 1H inductors across one of the

resistors such that the ckt looks like a 10 resistor in series with a  $\pi$ -section of a resistor and two inductors. With the series resistance on the i/p side, calc the transfer function of this ckt

16. Inverse laplace transform of  $\frac{1}{s^2} \left[ \frac{d}{ds} (e^{-3s/s}) \right]$
17. Lower useful input limit of a transducer is determined by...
18. Air-cored inductors are used for low frequency/high frequency/equal frequency operations.
19. Given 4 pole-zero plots identify which one corresponds to the driving point impedance of a series resonant ckt.
20. Expression for  $d(n)$ :  $u(n)-u(n-1)/ u(n-1)-u(n+1)/ u(n)+u(n+1)/...$
21. Relation between laplace and z-transform:  $s=z/ s=\ln z/ s=(\ln z/T) /...$
22. Maxm and minm probability error among ASK,PSK,FSK,DPSK etc
23. Which of the following is a non linear modulation scheme: PAM/QAM/PCM/...
24. Match the following functions:  $e^{-t}$  ,  $e^{-t} + e^t$ ,  $\sin(pt)$  with causal and stable system, causal and unstable system, etc.
25. Given a ckt with a 50  $\Omega$  resistor in series between two voltage sources of 10 V and 5 V magnitude calc power delivered by 5 V source.
26. Laplace transform of  $e^{-3t}u(t)+e^{2t}u(-t)$ .
27. Which photodetector has output affected by own intrinsic noise: PN/APD/PIN/all.
28. AC signal conditioning is used for inductive and capacitive/resistive/piezoelectric transducers/all of the above.
29. When I mode is added to proportional control system stability increases/ decreases/ steady state performance deteriorates/damping increases.
30. Reset control is another name for integral/derivative/proportional/.... Control.