Program: BE ELECTRONICS Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code:EXC 502and Course Name: DESING OF LINEAR INTEGRATED CIRCUIT

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.  | How does the open loop op-amp configuration classified? |
| Option A: | Based on the output obtained |
| Option B: | Based on the input applied |
| Option C: | Based on the amplification |
| Option D:  | Based on the feedback network |
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| Q2. | Which of the following electrical characteristics is not exhibited by an ideal op-amp |
| Option A: | Infinite voltage gain |
| Option B: | Infinite bandwidth |
| Option C: | Infinite output resistance |
| Option D: | Infinite slew rate |
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| Q3. | Which application use differentiator circuit? |
| Option A: | Am modulator. |
| Option B: | FM modulators |
| Option C: | Wave generators |
| Option D: | Frequency Shift keying |
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| Q4. | An instrumentation system does not include |
| Option A: | Transducer |
| Option B: | Instrumentation amplifier |
| Option C: | Automatic process controller |
| Option D: | Tester |
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| Q5. | How a differential instrumentation amplifier using transducer bridge can be used as a temperature controller? |
| Option A: | Increase room temperature |
| Option B: | Replaces calibrated meter with relay |
| Option C: | Change the bridge resistance |
| Option D:  | Replace thermistor by light intensity meter |
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| Q6. | RC phase shift oscillators contain a minimum of \_\_\_\_\_\_\_\_\_ Phase shift network. |
| Option A: | 1 |
| Option B: | 2 |
| Option C: | 3 |
| Option D:  | 0 |
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| Q7.  | What is the frequency of oscillation of wein bridge oscillator? |
| Option A: | fo = 1/(2πRC) |
| Option B: | fo = 2π/RC |
| Option C: | fo = RC/2π |
| Option D:  | fo = 2πRC |
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| Q8.  | Depending on the value of input and reference voltage a comparator can be named as |
| Option A: | Voltage follower |
| Option B: | Digital to analog converter |
| Option C: | Schmitt trigger |
| Option D:  | Voltage level detector |
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| Q9. | .How a triangular wave generator is derived from square wave generator |
| Option A: | Connect oscillator at the output |
| Option B: | Connect Voltage follower at the output |
| Option C: | Connect differential at the output |
| Option D:  | Connect integrator at the output |
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| Q10.  | which type of ADC follow the conversion technique of changing the analog input signal to a linear function of frequency? |
| Option A: | Direct type ADC |
| Option B: | Integrating type ADC |
| Option C: | Both integrating and direct type ADC |
| Option D:  | Indirect type ADC |
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| Q11.  | The flash type A/D converters are called as |
| Option A: | Parallel non-inverting A/D converter |
| Option B: | Parallel counter A/D converter |
| Option C: | Parallel inverting A/D converter |
| Option D:  | Parallel comparator A/D converter |
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| Q12.  | The inverted R-2R ladder can also be operated in |
| Option A: | Inverted mode |
| Option B: | Current Mode |
| Option C: | Voltage mode |
| Option D: | Non inverted mode |
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| Q13. | Which among the following can be used to detect the missing heart beat? |
| Option A: | Monostable multivibrator |
| Option B: | Astable multivibrator |
| Option C: | Schmitt trigger |
| Option D:  | Bistable multivibrator. |
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| Q14.  | A 555 timer in monostable application mode can be used for |
| Option A: | Pulse position modulation |
| Option B: | Frequency shift keying |
| Option C: | Speed control and measurement |
| Option D:  | Digital phase detector |
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| Q15. | Write the equation for time period of VCO? |
| Option A: | (2×Vcc×CT)/i |
| Option B: | (Vcc CT)/(2×i) |
| Option C: | (Vcc×CT×i)/2 |
| Option D:  | (2×Vcc)/(i×CT) |
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| Q16.  | Determine the value of current flow in VCO, when the NE566 VCO external timing resistor RT =250Ω and the modulating input voltage Vc=3.25V.(Assume Vcc=+5v). |
| Option A: | 3mA |
| Option B: | 12mA |
| Option C: | 7mA |
| Option D:  | 10mA |
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| Q17. | The output frequency of the VCO can be changed by changing |
| Option A: | External tuning resistor |
| Option B: | External tuning capacitor |
| Option C: | Modulating input voltage |
| Option D: | option a, b and c  |
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| Q18. | For a Zener diode shunt regulator, the source current is IS, the Zener diode current is IZ and the load current is IL. The source voltage is VS, Zener voltage is VZ and load voltage is VL. The load resistance is RL. What is the correct option for the safe operation of the diode? |
| Option A: |  IS = IZ + IL |
| Option B: | IS =< IZmax + IL |
| Option C: |  IS =< IZmin + IL |
| Option D:  |  VL = VZ  |
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| Q19.  | What is not related to a transistorized series regulator? |
| Option A: | The output can be varied by using a variable resistor |
| Option B: | The output is independent of temperature |
| Option C: | The overload and short circuit protection is not required |
| Option D:  | The circuit has negative feedback responsible for regulation |
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| Q20. | In a transistorized series regulator, how is the overload and short-circuit protection provided? |
| Option A: | By the use of a thermistor |
| Option B: | By using two additional diodes and a current sensing resistor to protect the series transistor |
| Option C: | By using a diode and an additional resistor to protect the transistor.  |
| Option D: | By using a diode along with a capacitor of a small capacitance value in series |
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| Q21. | A series switching regulators |
| Option A: | Improves the efficiency of regulators |
| Option B: |  Improves the flexibility of switching |
| Option C: |  Enhance the response of regulators |
| Option D:  |  Enhance the flexibility of regulator. |
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| Q22.  | In the IC 7805, what is the minimum input voltage for proper functioning? |
| Option A: | 5V |
| Option B: | 6V |
| Option C: | 7V |
| Option D:  | 8V |
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| Q23. | The switching regulators can operate in |
| Option A: | Step up |
| Option B: | Step down |
| Option C: | Polarity inverting |
| Option D:  | options a, b and c. |
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| Q24.  | Which among the following act as a switch in switching regulator? |
| Option A: | Rectifiers |
| Option B: | Diode |
| Option C: | Transistors |
| Option D:  | Relays |
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| Q25. | Calculate the efficiency of the step down switching regulator given the input voltage Vin= 13.5v and output voltage =6v. Assume the saturating Voltage Vs=1.1v and the forward voltage drop Vd = 1.257v |
| Option A: | η = 75% |
| Option B: | η = 48.5% |
| Option C: | η = 63.9% |
| Option D:  | η = 80.5% |