Program: TE Electronics and Telecommunication Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year Semester IV

Course Code: ECC403 and Course Name: Linear Integrated Circuits

Time: 1 hour 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.  | Which is not considered as a linear voltage regulator |
| Option A: | Fixed output voltage regulator |
| Option B: | b) Adjustable output voltage regulator |
| Option C: | c) Switching regulator |
| Option D:  | d) Special regulator |
|  |  |
| Q2. | To get a maximum output current, IC regulation are provided with |
| Option A: | a) Radiation source |
| Option B: | b) Heat sink |
| Option C: | c) Peak detector |
| Option D: | d) None of the mentioned |
|  |  |
| Q3. | The change in output voltage for the corresponding change in load current in a 7805 IC regulator is defined as |
| Option A: | a) All of the mentioned |
| Option B: | b) Line regulation |
| Option C: | c) Load regulation |
| Option D: | d) Input regulation |
|  |  |
| Q4. |  Which of the following is not a characteristic of adjustable voltage regulators? |
| Option A: | a) Non-versatile |
| Option B: | b) Better performance |
| Option C: | c) Increased reliability |
| Option D: | d) None of the mentioned |
|  |  |
| Q5. |  Find the difference between output current having a load of 100Ω and 120Ω for 7805 IC regulator. Consider the following specification: Voltage across the load = 5v; Voltage across the internal resistor= 350mv. |
| Option A: | a) 8.4mA |
| Option B: | b) 7mA |
| Option C: | c) 9mA |
| Option D:  | d) 3.4mA |
|  |  |
| Q6. |  The input stage of an Op-amp is usually a ………. |
| Option A: | differential amplifier |
| Option B: | class B push-pull amplifier |
| Option C: | CE amplifier |
| Option D:  | swamped amplifier |
|  |  |
| Q7.  | 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 |
|  |  |
| Q8.  | An ideal op-amp requires infinite bandwidth because |
| Option A: | Signals can be amplified without attenuation |
| Option B: | Output common-mode noise voltage is zero |
| Option C: | Output voltage occurs simultaneously with input voltage changes |
| Option D:  | Output can drive infinite number of device |
|  |  |
| Q9. | Find the output voltage of an ideal op-amp. If V1 and V2 are the two input voltages |
| Option A: | VO= V1-V2 |
| Option B: | VO= A×(V1-V2) |
| Option C: | VO= A×(V1+V2) |
| Option D:  | VO= V1×V2 |
|  |  |
| Q10.  | Which is not the ideal characteristic of an op-amp? |
| Option A: | Input Resistance –> 0 |
| Option B: | Output impedance –> 0 |
| Option C: | Bandwidth –> ∞ |
| Option D:  | Open loop voltage gain –> ∞ |
|  |  |
| Q11.  | Find the input voltage of an ideal op-amp. It’s one of the inputs and output voltages are 2v and 12v. (Gain=3) |
| Option A: | 8v |
| Option B: | 4v |
| Option C: | -4v |
| Option D:  | -2v |
|  |  |
| Q12.  | Which factor determine the output voltage of an op-amp? |
| Option A: | Positive saturation |
| Option B: | Negative saturation |
| Option C: | Both positive and negative saturation voltage |
| Option D: | Supply voltage |
|  |  |
| Q13. | As the frequency increases, input impedance of differentiator \_\_\_\_\_\_\_\_\_\_. |
| Option A: | Increases |
| Option B: | Decreases |
| Option C: | Remains constant |
| Option D:  | None of above |
|  |  |
| Q14.  | In an inverting ideal integrator, which component exhibits the feedback path connection? |
| Option A: | Resistor |
| Option B: | Inductor |
| Option C: | Capacitor |
| Option D:  | Diode |
|  |  |
| Q15. |  For a temperature controller circuit comprising instrumentation amplifier, which among the following is adopted as a temperature sensor? |
| Option A: | Thermistor |
| Option B: | Sensistor |
| Option C: | Thyristor |
| Option D:  | Thermocouple |
|  |  |
| Q16.  |  Among which of the following factors do/does the operation of sample and hold mode depend/s?? |
| Option A: | Input |
| Option B: | Output |
| Option C: | Position of switch |
| Option D:  | All of the above |
|  |  |
| Q17. |  In a peak detector circuit, which component holds the peak value till a higher peak value is detected? |
| Option A: |  Diode |
| Option B: | Inductor |
| Option C: | Capacitor |
| Option D: | MOSFET switch |
|  |  |
| Q18. | In an inverting Schmitt Trigger circuit, the hysteresis \_\_\_\_\_\_\_\_ is also known as 'hysteresis width'. |
| Option A: | voltage |
| Option B: | current |
| Option C: | resistance |
| Option D:  | power |
|  |  |
| Q19.  |   In hysteresis width, the hysteresis voltage is equal to \_\_\_\_\_\_\_ upper & lower threshold voltages (VUT  & VLT). |
| Option A: | Sum of |
| Option B: | difference between |
| Option C: | product of |
| Option D:  | division of |
|  |  |
| Q20. | Zero crossing detector circuit plays a crucial role in conversion of input sine wave into a perfect \_\_\_\_\_\_\_\_\_at its output. |
| Option A: | triangular wave |
| Option B: | square wave |
| Option C: | saw-tooth wave |
| Option D: | pulse wave |
|  |  |
| Q21. | For an ideal comparator, what should be the value of the response time? |
| Option A: | Zero |
| Option B: | Unity |
| Option C: | Infinite |
| Option D:  | Unpredictable |
|  |  |
| Q22.  | Which parameter/s is/are used to indicate the speed of a comparator? |
| Option A: | Response Time |
| Option B: | Propagation Delay |
| Option C: | Both a and b |
| Option D:  | None of the above |
|  |  |
| Q23. | How to keep the output voltage swing of the op-amp comparator within specific limits? |
| Option A: | External resistors or diodes are used |
| Option B: | External zeners or diodes are used |
| Option C: | External capacitors or diodes are used |
| Option D:  | External inductors or diodes are used |
|  |  |
| Q24.  | Zero crossing detectors is also called as |
| Option A: | Square to sine wave generator |
| Option B: | Sine to square wave generator |
| Option C: | Sine to triangular wave generator |
| Option D:  | All of the mentioned |
|  |  |
| Q25. | Name the comparator that helps to find unknown input. |
| Option A: | Time marker generator |
| Option B: | Zero crossing detectors |
| Option C: | Phase meter |
| Option D:  | Window detector |