[A 77]

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Monday, 28/03/16
2.30 P.M. to 5.30 P.M.
Total Marks 70

Q.1 Multiple Choice Questions:

10

1. Active filter have gain
   - (i)   less than Unity
   - (ii)   Greater than Unity
   - (iii)   Infinite
   - (iv)   Unity

2. Voltage gain of an ideal Op-Amp is ----------------,
   - (i)   Infinite
   - (ii)   Very high
   - (iii)   Very low
   - (iv)   Zero

3. In notch filter the gain at one particular frequency becomes -----------------
   - (i)   Infinite
   - (ii)   Very high
   - (iii)   Very low
   - (iv)   Zero

4. For rectification -------- is used
   - (i) transistor
   - (ii) diode
   - (iii) capacitor
   - (iv) resistor

5. Schmitt trigger uses a
   - (i) positive feedback
   - (ii) negative feedback
   - (iii) compensating capacitor
   - (iv) none of above

6. Which circuit cutoff the voltage above or below certain level?
   - (i)   Clipper
   - (ii)   Clamper
   - (iii)   VCO
   - (iv)   None of the above

7. The process known as signal compression is used with an -------- amplifier.

①

(i) Log

(ii) Antilog

(iii) Instrumentation

(iv) Feedback

8. No triggering input is applied in ------------------- multivibrator

(i) Astable

(ii) Monostable

(iii) Bistable

(iv) Both Astable and Bistable.

9. Timer 555 is an ------------ IC used to produce delay of few micro second to few minutes

(i) Digital

(ii) Analog

(iii) Both analog and digital

(iv) None of the above

10. When the VCO frequency and input signal frequency becomes equal than the PLL is said to be ------------------------------

(i) Locked

(ii) Capture

(iii) Free Running

(iv) Open

Q. 1   Answer any **Ten** questions in short.   20

1. Draw functional block diagram OP-Amp.
2. State AC parameters of Op Amplifier?
3. State two differences between active and passive filters.
4. Draw circuit of OP- Amp as Monostable multivibrator.
5. State applications of Monostable multivibrator?
6. What is peak detector circuit used for?
7. Draw waveform diagram for Pulse width modulation circuit.
8. Combination of which circuits is used to produce PWM signal?
9. What is function of Clipper circuit?
10. State salient features of 555 Timer.
11. Draw the circuit of Water level control using 555 Timer.
12. Draw pin diagram of 555 Timer and label each pin.

Q.3 Draw block diagram of Op Amp and discuss function of each block.   10

OR

Q.3 Explain DC parameters of Op-Amp.   10

②

Q.4 Write a short note Precision Full wave rectifier using Op-Amp.   10

<div align="center">OR</div>

Q.4 Draw circuit diagram of Astable multivibrator using Op Amp. and explain its operation.   10

Q.5 Draw circuit diagram of temperature compensated LOG amplifier and obtain expression for output voltage.   10

<div align="center">OR</div>

Q.5 What is modulation? How many types of modulation you know? Explain Pulse Width modulation in detail.   10

Q.6 Draw functional block diagram of IC 555and explain function of each block.   10

<div align="center">OR</div>

Q.6 Explain any two applications of Timer IC-555?   10

***************************BEST OF LUCK *************************

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