EVENING

06 MAR 2021

[Total No. of Questions: 09]
Uni. Roll No. .....

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Program: B.Tech. (Batch 2018 onward)
Semester: 4th
Name of Subject: Analog Circuits
Subject Code: PCEC-106
Paper ID: 16222

Time Allowed: 03 Hours

Max. Marks: 60

NOTE:

1. Parts A and B are compulsory
2. Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
3. Any missing data may be assumed appropriately

Part – A

[Marks: 02 each]

1.
   a. Define the term crossover distortion?
   b. What are advantages of tuned circuits?
   c. Explain Barkhausen criteria.
   d. Define CMRR.
   e. To match a 16 Ω speaker load to an amplifier so that the effective load resistance is 10 KΩ, What should be the transformer turn ratio ?
   f. Differentiate between summing and scaling amplifier based on opamp.

Part – B

[Marks: 04 each]

2. Explain class A transformer coupled power amplifier.
3. What do you understanding by zero crossing detector?
4. Summarize complementary symmetry push pull amplifier.
5. Derive the relation for maximum output power for class B push pull amplifier.
6. An amplifier with feedback has voltage gain of 40. To produce a specified output the input voltage required without feedback is 0.1 V. When feedback has been provided the input must be increased to 2.4 V to produce the same output. Calculate the value of feedback ratio. ?
7. Distinguish between wide band reject filter and narrow band reject filter.

Part – C

[Marks: 12 each]

8. Explain the concept of negative feedback in amplifiers. List at least four effects of negative feedback on amplifier characteristics.

OR

Discuss the working of IC 555 timer. How it works in monostable and astable mode.

P.T.O.

9. Derive the relation for output frequency of Hartley Oscillator.

OR

(a) Design a differentiator to differentiate an input signal that varies in frequency from 10 Hz to about 1 KHz.

(b) If a sine wave of 1 V peak at 1000 Hz is applied to the differentiator designed above , draw its output waveform.

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