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Reg. No.................................

Name....................................

B.Sc. (ELECTRONICS AND COMPUTER HARDWARE) DEGREE (SPECIAL MERCY CHANCE) EXAMINATION, JANUARY 2025

Third Semester

ANALOG INTEGRATED CIRCUITS

(Prior to 2009 Admissions)

Time : Three Hours | Maximum Marks : 75

Answer any **five** *questions.*
Each question carries 15 *marks.*

1. (a) Measure the block diagram representation of typical op-amp. (8)

   (b) Distinguish between the inverting and non-inverting amplifier. (7)

2. (a) Discover the key performance characteristics of summing amplifier. (8)

   (b) What are the different types of instrumentation amplifier ? Explain. (7)

3. (a) What is a band reject filter and how does it differ from a band pass filter ? (8)

   (b) How do you design a high pass filter using passive components ? Explain. (7)

4. (a) Elaborate the analyze frequency stability and phase noise of sine wave oscillators. (8)

   (b) Outline the design a waveform generator using VCOs and timers. (7)

5. (a) Enumerate the characteristics of voltage regulators. (7)

   (b) Determine the basic blocks of linear voltage regulators. (8)

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6. (a) Examine the typical comparator circuits using op-amp. (7)

   (b) Assess the Schmitt trigger in a voltage comparator circuit. (8)

7. (a) Compare and construct the modulators and demodulators. (8)

   (b) Illustrate the performance of a balanced modulator circuit. (7)

8. (a) Discuss the operating principle of the PLL. (10)

   (b) What are the applications of PLL? Explain. (5)

$(5 \times 15 = 75)$