D 90314 (Pages : 2) Name.....

Reg. No.....

SEVENTH SEMESTER B.TECH. (ENGINEERING) DEGREE [09 SCHEME] EXAMINATION, NOVEMBER 2015

AI 09 704 – ANALOG AND DIGITAL CIRCUIT DESIGN

Time : Three Hours Maximum : 70 Marks

Part A

Answer **all** *questions.*

1. Where do sequential statements exist in VHDL?
2. What are the Different object types in VHDL programming?
3. What is Entity?
4. What is MOS Op-Amp?
5. Define Body effect.

(5 × 2 = 10 marks)

Part B

Answer any **four** *questions.*

6. Describe the basic structure of MOSFET.
7. How should a MOSFET be biased so as to operate as a stable current source?
8. Explain briefly about One stage Op-Amps.
9. Explain State Assignment Techniques.
10. Brief about different signal assignment Concurrent structures.
11. Give the VHDL code for Half adder.

(4 × 5 = 20 marks)

Part C

Answer **all** *questions.*

12. (a) Explain in detail about the small signal MOS model.

Or

(b) Explain in detail about the differential pair with MOS leads.

13. (a) Describe in detail about the performance parameters of MOS Op-Amp.

Or

(b) What is a Switched Capacitor Integrator circuit? Explain.

Turn over

14. (a) Explain in detail about the sequential statements in VHDL.

Or

(b) Describe the Conversion functions in VHDL.

15. (a) Write VHDL programming for the Multiplexer combinational Circuit.

Or

(b) Write VHDL programming for the Multiplexer sequential Circuit.

(4 × 10 = 40 marks)