



VEERMATA JIJABAI TECHNOLOGICAL INSTITUTE
[Central Technological Institute, Maharashtra State]
Matunga, Mumbai-400 019

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SEMESTER EXAMINATION *ESE (Re-exam)* DATE OF EXAM *23/05/2014*
SEMESTER & PROGRAM *SY BTECH IV(Comp)* TIME *1.30 to 4.30 pm*
TIME ALLOWED *3 HRS.* MARKS *100 M*
COURSE (Course Code) : *CO0205 Electronics & Communication System.*

- Instructions
1. All questions are compulsory.
 2. Figures to the right indicate full marks.
 3. Draw Well labeled diagram where needed.

Q.1	(a)	How many number of control lines are required for a 8 – to – 1 multiplexer? Show with diagram using 2-to-1 multiplexer ?	5 M
	(b)	How many Flip-Flops are required for mod-16 counter?	1 M
	(c)	Name the device which converts BCD to Seven Segment ?	1 M
	(d)	Minimize the logic function $Y(A,B,C,D) = \sum m(0,1,2,3,5,7,8,9,11,14)$. Use Karnaugh map. Draw logic circuit for the simplified function □	5 M
Q2	(a)	Simplify the expressions using Boolean postulates' $\overline{\overline{XY} + XYZ + X(Y + XY)}$ OR $XY + XZ + XY\overline{Z}(XY + Z)$	5 M
	(b)	i) Design a 4 to 1 Multiplexer by using the three variable function given by $F(A,B,C) = \sum m 1, 3, 5, 6)$. ii) Design a sequence generator the sequence ...1101011....	5 M
	(c)	Convert i) 36 decimal number to Excess-3 code. ii) 4096 to BCD code iii) 53 to gray code	5 M 3 M
Q.3	(a)	Discuss in detail, the working of Full Adder logic circuit and extend your discussion to explain a binary adder, which can be used to add two binary numbers. Also explain the process of subtraction using adder.	10 M
	(b)	Explain Amplifier in context of power dissipation, efficienc ,properties and classification. OR Dual Tone Multifrequency System (DTMF) in detail.	10 M
	(c)	What is the need of modulate analog signals and what are its type?	5 M
Q.4	(a)	Define counters and explain it types with help of example and diagrams.	10 M
	(b)	What is BJT. Draw PNP BJT symbol and circuit Also Draw the characteristic diagram with circuits of CC,CE, of NPN transistor.	15 M
Q5	(a)	Explain Distinguish between enhancement mode and depletion mode metal oxide in MOSFET semiconductor field effect transistors giving their characteristics.	10 M
	(b)	Differentiate between i) TDMA , FDMA , CDMA ii) FM , PM ,AM	10 M