POSSESSION OF MOBILES IN EXAM IS UNFAIR PRACTICE

Student Name _____ **Enrollment No.**_____

Jaypee Institute of Information Technology, NOIDA

End Semester Examination, Even Sem. 2016

B.Tech. 2nd Semester

Course Title: Electrical Science-2/Basic Electronics Devices and Circuits/Basic Electronics

Course Code: 15B11EC211/10B11EC211/15B11EC213

Max Marks: 35 **Time: 2 Hours**

Note: Attempt ALL the questions.

`Q1. Find i(t) for t> 0 for the circuit shown in figure1.The circuit is in steady state at t=0⁻. (5)

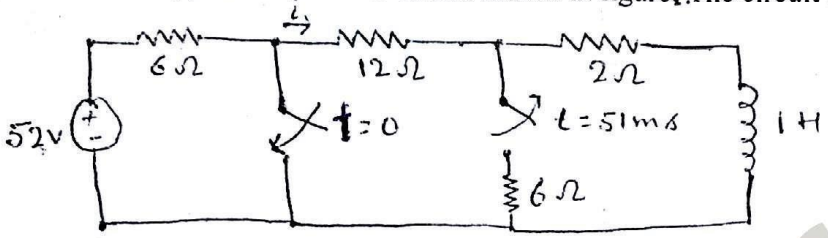

Figure 1

Q2. Implement the given function using 8x1 mux only.
F(A,B,C,D)=Σ m(1,3,4,11,12,13,14,15) (5)

Q3.(a). Find the time period of following signals (2)

(i). V(t) =cos4πt +sin$\sqrt{2}$t

(ii). X(t)= $\sin^2 t$

(b). Find the energy and power of the given signal (3)

$$X(t) = \begin{cases} t-2 & -2 \le t \le o \\ 2-t & 0 \le t \le 2 \\ 0 & others \end{cases}$$

Q4. Sketch the following signals for the given signal x(t) shown in figure 2 (5)
i) x(t)u(1-t) ii) x(t)[u(t)-u(t+1)] iii) x(t)δ(t-3/2) iv) x(1.5t-1)

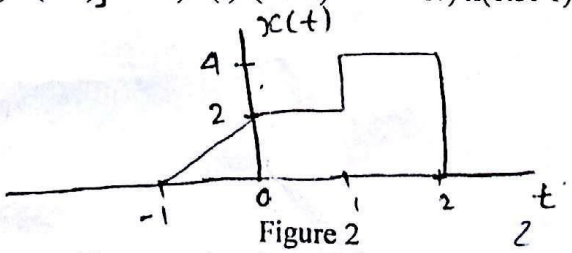

Figure 2

Q5. Define sampling theorem. Also state the phenomenon of Aliasing and its removal.. (5)

Q6. In a 50-KVA, 11KV/400-V, single phase transformer, the iron and copper losses are 500w and 600w respectively under rated condition. Calculate; (1) efficiency at unity power factor at full load, (2) load for maximum efficiency, and (3) iron and copper losses for this load. (5)

Q7. Write short notes on following: (5)

a). Need for modulation b) various looses in transformer c) EMF equation for DC motor