BEL Placement Paper May 2008

(Objective and Electronics)

Part I—Objective questions (40 with 1.5 marks each) with 50% -ve marking.

1. Numerical problem based on modulation index fc, fm……. (formula based direct queston).

2. Poles & zeroes are at .01,1,20,100…… find phase margin/angle at f=50Hz. ans -90(By drawing bode plot)

3. In n-type enhancement mode MOSFET drain current———— options are- increase/decrease with inc/dec in drain/gate voltage. ans(d)

4. Gain of an directional antenna 6db P=1mw find transmitted power……(use Ptr= G * P.)

5. Multiplication of two nos 10101010 & 10010011 in 2's complement form..

6. A ckt is given suppplied with 15v with a series of resistance of 1k and a parallel combination of 12V zener diode and 2k resistance. FInd current through 2k resistance.
Ans: 6mA

7.A MP has 16 line data bus & 12 line addr bus find memory range…….Ans..4K(4*1024bytes)

8.Divide by 12 counter require minimum ….. no of flip flops Ans. 4

9.Storage time in p-n junction.

10.Succesive approx. use in …. Ans ADC(analog to digital)

11.Pre-emphasis require in …… low freq/high freq signal.

12.Handshake in MP …….. Ans to communicate with slower peripherals.

13. Binary equivalent of 0.0625 Ans. 0.0001

14.Which code is self complement of itself

15.Excess three code of an given binary no.

16.When we add 6 in BCD operations……. Ans. if result exceed valid BCD nos.

17.Shottky diode has better switching capability because it switch between…….

18.Figure of Merit is same as……

19.Swithcing in diode happens when….

20.During forward bias majority charge conc. in depletion layers inc/decrease…..

21.Channel capacity depend on……. Ans. Usable frequency or bandwidth

22.A 2kHz signal is passed through an Low pass filter having cut-off freq 800Hz o/p will be

23. Carrier amplitude 1v, peak to peak message signal 3mv find modulation index.

24.A 12V signal is quantized into two V/14 & 6 equal V/7 determine quantization error.

Part II True & false…...(10 1 mark each) with 50% -ve marking

1.Power dissipation in ECL is minimum……. False

2.Fourier Transform of a symmetric conjugate function is always real …. True

3.Divide by 12 counter requires a minimum of 4 flip flops…….True

4.Boron can be use as impurity to analyse base of a npn transistor…….True