

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST - III EXAMINATION- May 2018

B.Tech IV Semester (BI & BT)

COURSE CODE: 15B11EC411

COURSE NAME: Basic Electronics

COURSE CREDITS: 4

MAX. MARKS: 35

MAX. TIME: Two Hrs

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q1) Convert the following number systems as indicated :

(5)

$$(7526)_8 = ()_2 ; (10A4)_{16} = ()_2 ; (82)_{10} = ()_2 ; (1101101)_2 = ()_{10} ; (CA57)_{16} = ()_{10}$$

Q2) a) Represent the decimal numbers 16 & -24 as signed binary numbers & perform subtraction using 2's complement method. (16-24 = -8) (2.5)

b) Convert the decimal number 32480 to a single precision floating point binary number. (2.5)

Q3) Simplify the following expression using DeMorgan's theorem and Boolean Algebra.

a) $(A+B)\overline{CD}+E+\overline{F}$

(2.5)

b) $[\overline{A}\overline{B}(C+BD)+\overline{A}\overline{B}]C$

(2.5)

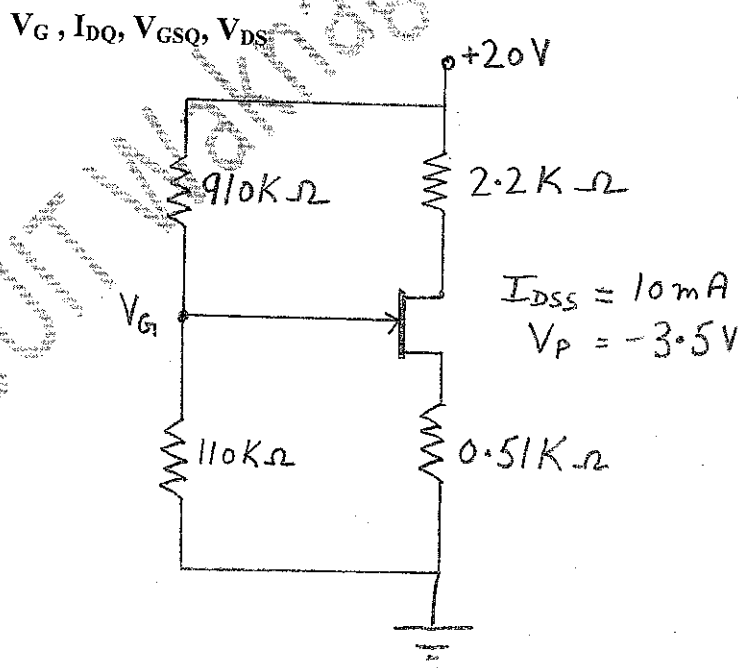
Q4) Use a Karnaugh map to minimize the following SOP expression.

(5)

$$\overline{B}\overline{C}\overline{D}+\overline{A}\overline{B}\overline{C}\overline{D}+\overline{A}\overline{B}\overline{C}D+\overline{A}\overline{B}C\overline{D}+\overline{A}\overline{B}CD+\overline{A}B\overline{C}\overline{D}+\overline{A}B\overline{C}D+\overline{A}BC\overline{D}+\overline{A}BCD$$

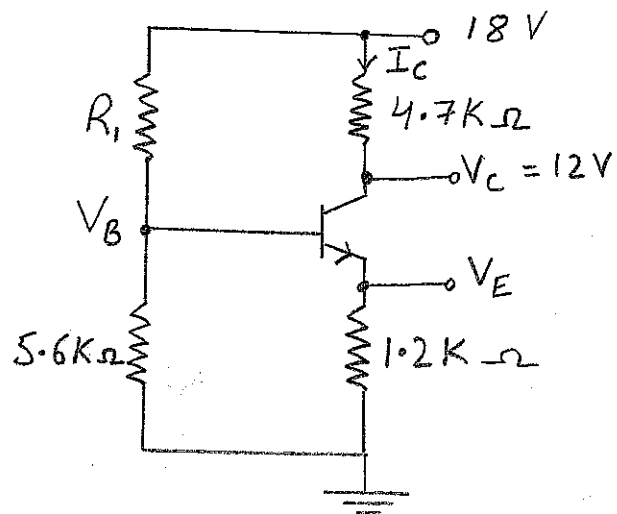
Q5) For the network of following figure determine:

(5)



Q6) For the following network determine I_C , V_E , V_B , R_1 .

(5)



Q7) For the circuit shown in figure determine currents I_1 to I_5 .

(5)

