**Assignment 1 (Number system)**

**Submission date**: Before 25/02/2024

**Submission Link**: https://forms.gle/V9uWZ3D4CxSAur4W6

**Q1 Convert following numbers into decimal**

(11011.101)2 (475.63)8 (FB7.C9)16 (763.82)9 (46.532)7

**Q2 Perform the following conversions**

(479.83)10=(?)8 (475.63)10=(?)16  (75.63)10=(?)2 (475.63)10=(?)7

**Q3 Perform the following conversions**

(478)9=(?)8 (465)7=(?)6  (4756)8=(?)7 (11011)2=(?)4

**Q4 Without converting into decimal, perform the following conversions**

(11111001101.1011)2=(?)8 (EFC9.A7)16=(?)8  (475.762)8=(?)16 (11011)2=(?)4

**Q5 Determine r’s compliment and (r-1)’s compliment of the following numbers**

(11011.101)2 (475.63)8 (FB7.C9)16 (763.82)9 (46.532)7

**Q6 Perform the following mathematical operations**

(476.23)8 + (763.25)8 =(?)8 (476.23)8 + (AF2.5C)16 =(?)8 (1111001101.101101)2 + (763.25)8 =(?)16

(476.23)9 + (783.54)9 =(?)9 (546)7 + (863)9=(?)7 (362.74)8 x (76)8 =(?)8  (EF9)16 x (9F)16 =(?)16

**Q7 Perform the following mathematical operation**

(FBD.23)16 - (A32.5C)16 =(?)16 (1111001.101)2 - (100100.111)2 =(?)2 (756.23)8 - (363.25)8 =(?)8

(476.23)8 + (FC9.A7)16 - (AF2.5C)16 =(?)8=(?)2=(?)16

**Q8 Subtract following numbers by r’s compliment and (r-1)’s compliment method.**

(FBD9.E3)16 - (A52C.3A)16 (56.43)8 - (763.25)8 (476.23)9 - (783.54)9 (111101.101)2 - (10100.11)2

**Q9 Subtract following numbers by 1’s compliment and 2’s compliment method.**

(D9.E3)16 - (C.3A)16 (564)8 - (3B)16 (47)10 - (23)10  (111101.101)2 - (10100.11)2

**Q10** If (211)x = (152)8, find the value of base x

**Q11** If (135)x+(144)x= (323)x ,find the value of base x

**Q12** If



**Q12** If (45)x = (41)y and (42)x = (35)y Find the values of x and y

**Q13** If (40)x = (30)y and (35)x = (37)y Find the values of x and y

**Q14** Find the value for x which 32 in base four = 22 in base x?

**Q15** What is the base (or radix) of the number if the solution to the quadratic equation

X2-10X+31=0 is X=5 and X=8.