A-10
B-11
~~C-12~~

~~AAB84~~
× ~~5BA~~
~~804~~

5BA
171494
190408 ×
96848 ××
B53A154

Lecture 6

- 1010111
  × 1011
  1010111
  1010111×
  0000000××
  1010111×××
  1110111101 Ans

- 1010111
  110111
  1010111
  1010111×
  1010111××
  0000000×××
  1010111××××
  1010111×××××
  100101011110001 Ans

- $(101011)_2 * (2)_{10}$
  $(2)_{10} \to (10)_2$
  $(101011)_2 (10)_2 = 1010110$

- $(101011)_2 * (4)_{10} = 10101100$ Ans
  $(4)_{10} \to (100)_2$

- $(101011)_2 * (8)_{10} = 101011000$
  $(8)_{10} \to 1000$

- $(1756)_8 * (64)_{10} = 175600$ Ans
  $(64)_{10} \Rightarrow (100)_8$

- $(163)_7 \times (343) =$ $= 163000$ Ans
  $7^3 \Rightarrow 1000$

- $(1AF)_{16} * (256)_{10} =$ $(1AF00)_{16}$ GATE
  $16^2 \Rightarrow (100)_{16}$

* Division

```
47) 4444 (74        ---- Base 8
    421
    ----
    x234
     234
     ---
       0
```

```
101) 101.1011 (1001.0      ---- Base 2
     101
     ---
     x101
      101
      ---
      x 1
        0
        -
        1
```

$(11101)_2 + (8)_{10} \Rightarrow (1000)_2$

$\frac{11101}{1000} = 11.101$

- $(1011011)_2 \div (8)_{10} = 1011.011$ Ans

- $(100100001)_2 \div (4)_{10} = 100100001 \div 100 = 1001000.01$ Ans.

$$
\begin{array}{r|l}
100 & 100100001 \;(1001000.01 \\
\underline{100} & \\
\times 100 & \\
\underline{100} & \\
\times 001 & \\
\underline{000} & \\
100 & \\
\underline{100} & \\
\times &
\end{array}
$$

- $(765) \div (64)_{10} \Rightarrow 100$

  $= 7.65$ Ans

- $(64532)_7 \div (343)_{10} = 64.532$

  $\Downarrow$

  7^3

- $(1AFDBC)_{?} \div (256)_{10} = 1AF.DBC$ Ans

  $\Downarrow$

  16^2

- $(y)_n \div (x^a)_{10}$

  Shift point "a" position to the left

  $(y)_2 \times (x^a)_{10}$

  shift point "a" position to right

Q Which of the following has no. divisible by 49

a) 12340 ÷ ÷ ÷ 7
b) 1236 ⇒ ×
c) 364500 ⇒ ÷ 49
d) 4634000 ⇒ ÷ 343

Which of the following no. is divisible by 16 base 2

a) 1010 1101
b) 1010 110000 — 16
c) 1010110101 00 — 4
d) 1011011011000000 — 32

Ans b & d

* Compliments of "r"

r's (r−1)'s

$r^n - N$ $r^n - r^{-m} - N$

$N \Rightarrow n \cdot m$

Base 10 ⟷ 10's, 9's

$(367.49)_{10}$

10's ⇒ $10^3 - 367.49 = 632.51$

9's ⇒ $10^3 - 10^{-2} - 367.49$

$1000 - 0.1 = 999.99$

$-\ 367.49$

632.50

$(1463.425)_{10}$

10's compliment = 10000.000
1463.425
8536.575 Ans

9's Compliment, 10000.000
-001
9999.999
-1463.425
8536.574 Ans

$(\ )_{10}$ → 10's Compliment
↓
9's Compliment

Sub all no. from 9 & add at last pla
add +1

- 4639.852 => 10's Compliment
5360.148 Ans

- 10's → 36452 = 63548

Base 8 < 8's
7's

- $(436.47)_8$ find 8's Comp

$1000 - 436.47 = 341.31$ Ans

$777.77 - 436.47 = 341.30$ Ans

Base $\rightarrow$ r's Compliment
$(r-1)$'s

$(7864.78)_9 \rightarrow$ 9's Compliment

$7864.78 = \underbrace{1024.10}$
9's compliment

$\underbrace{1024.11}$
9's compliment

Q Find 7's Compliment of 5555.555 in base 7 $\rightarrow$ 1111.112 Ans

Let base is 8 $\rightarrow$ 2222.222 Ans

Q Find 7's Compliment of 7652.123
Base 7 Base 8

01956.654