

ASSIGNMENT - 1

(MULTIPLEXING)

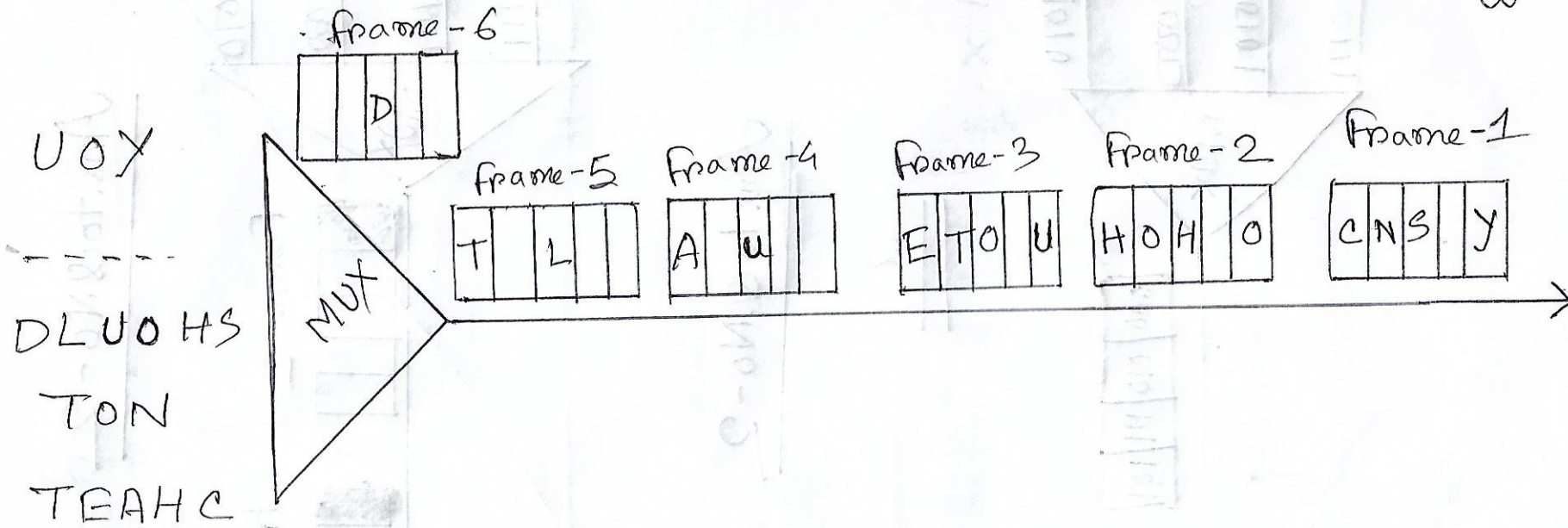
Name% SHADAB JOBAL

ID : 19101072

Sec : 01

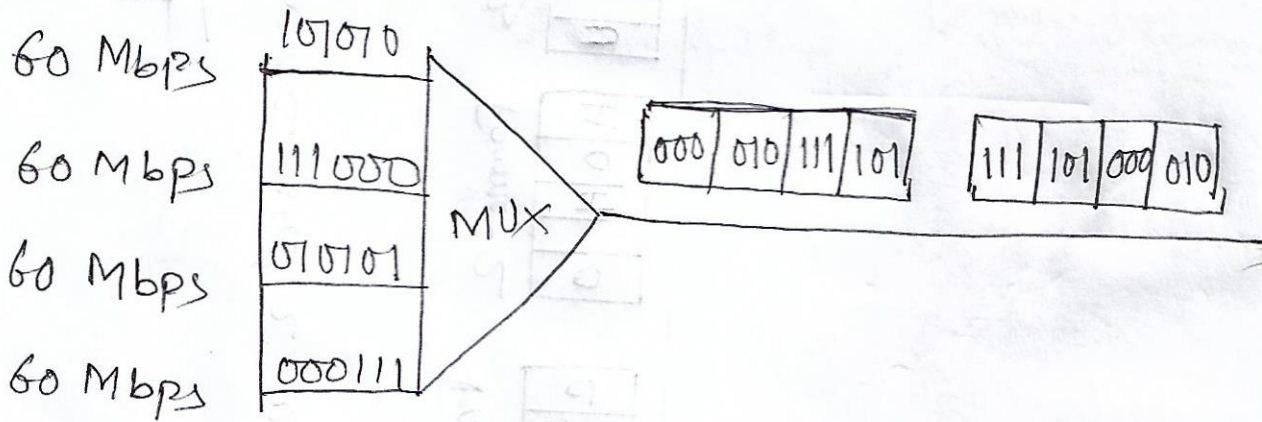
Ans. to Q No - 1

The characters are sent in the same order as typed.



Ans to Q.No-2

Q



b

There are 3 bits in each slot.

\therefore Size of an output frame = (3×4) bits

$$= 12 \text{ bits}$$

(Ans)

c

$$\text{Output frame rate} = (60 \div 3) \times 10^6 \text{ frames/s}$$
$$= 20000000 \text{ frames/seconds}$$

d

$$\text{Frame duration} = \frac{1}{\text{Frame rate}}$$

$$= \frac{1}{20000000} \text{ seconds}$$

$$= 50 \text{ nano seconds,}$$

(Ans)

c

d

Output data rate

= output frame rate \times frame size

= (20000000×12) bps

= 240 Mbps

f

Input bit duration = $\frac{1}{\text{input bit rate}}$

= $\frac{1}{60 \times 10^6}$

= 16.6667 nanoseconds

P.T.O

g

$$\begin{aligned}\text{output bit duration} &= \frac{1}{\text{output bit rate}} \\ &= \frac{1}{240 \times 10^6} \\ &= 4.1667 \text{ nanoseconds}\end{aligned}$$

h

$$\begin{aligned}\text{output slot duration} &= \frac{\text{input bit duration}}{\text{number of connections}} \\ &= \frac{16.6667}{4} \text{ nanoseconds} \\ &= 4.1667 \text{ nanoseconds} \\ &= \text{output bit duration,}\end{aligned}$$

(Ans)