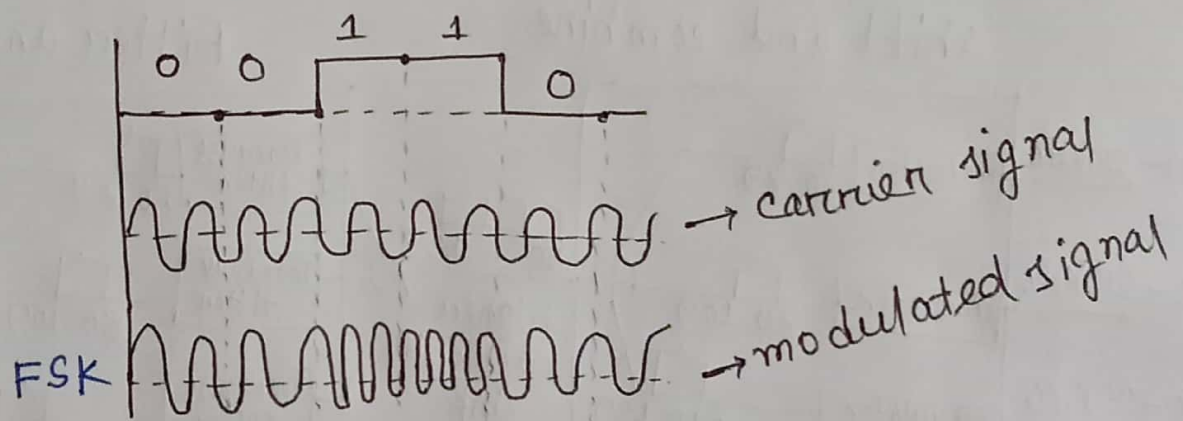
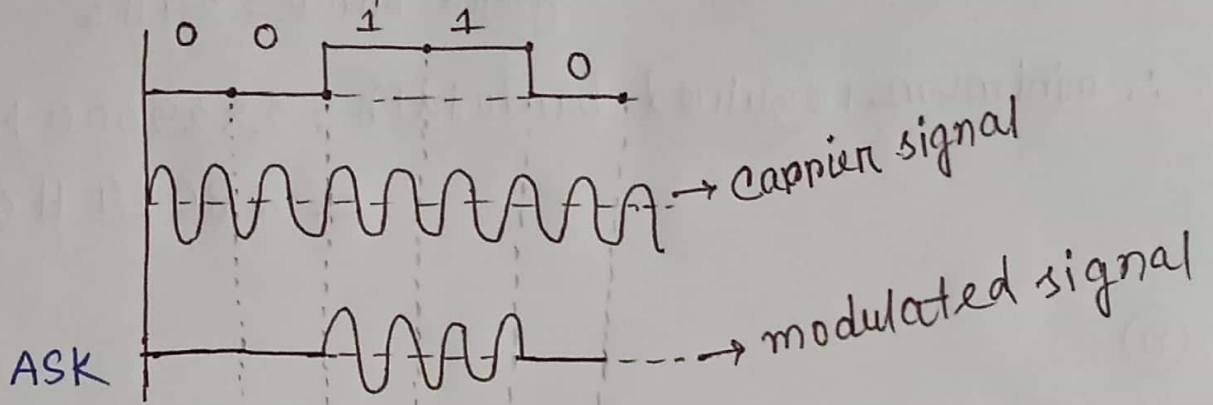


Answer to the ques no. 2

(a)

AB-CDEFG-H

21-44998-2 → binary is = 00110



ASK → bit 1 → amplitude of the modulated signal same as carrier.  
 bit 0 → " " " " " remain zero.

FSK → bit 1 → Frequency of the modulate signal increase.  
 bit 0 → " " " " " remain same.

(b)  $A_{EG} = 298 \text{ KHz}$  and  $A_{GH} = 2482 \text{ KHz}$

Bandwidth =  $2482 - 298 = 2184 \text{ KHz}$

carrier frequency =  $\frac{2482 + 298}{2} = 1390 \text{ KHz}$

we know that,

$$B = (1+d)S$$

$$\therefore S = \frac{B}{1+d} = \frac{2184}{2} = 1092 \text{ kbps}$$

(Answer)

Answers to the ques no. 4.

a) AB - CDEFG - H  
21 - 44998 - 2 channel bitrate = 282 kbps

(i) input duration =  $\frac{1}{282 \text{ kbps}} = 3.546 \mu\text{s}$

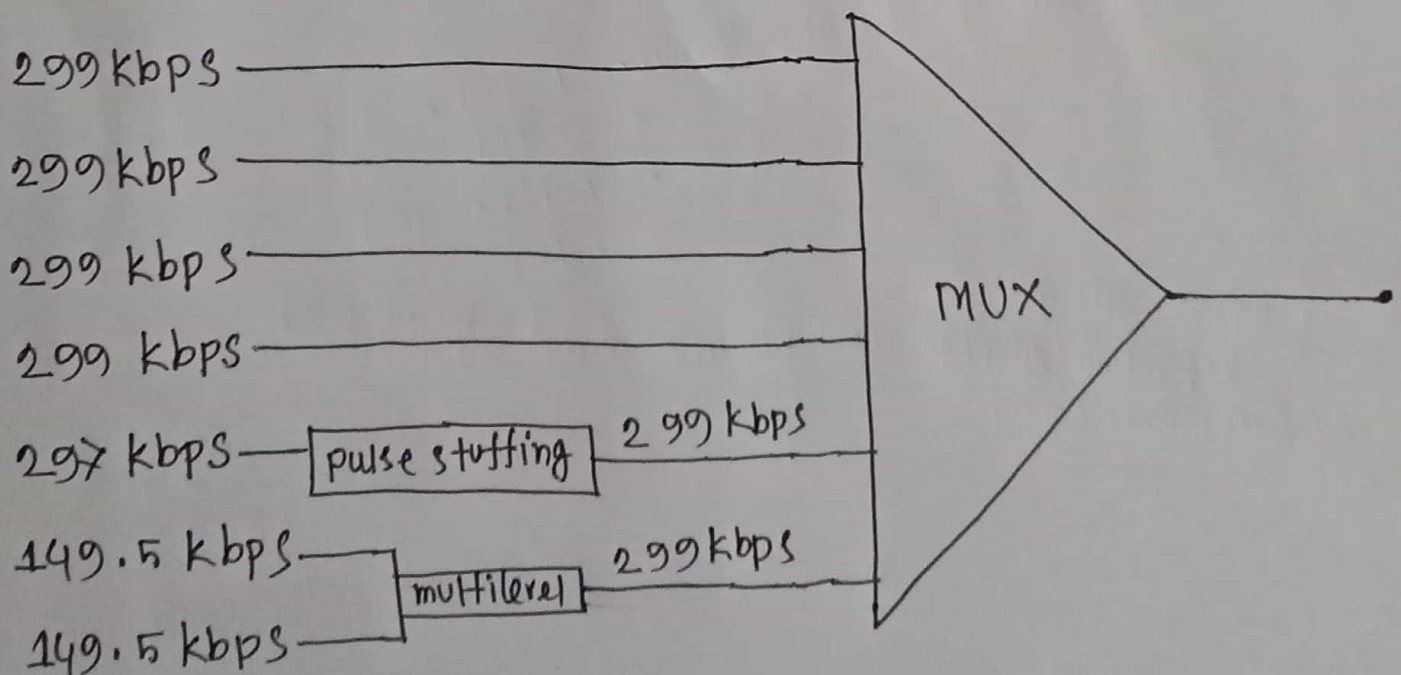
(ii) link rate =  $3 \times 282 \text{ kbps} = 846 \text{ kbps}$

(iii) input duration = frame duration. so  $3.546 \mu\text{s}$

(iv) output slot duration =  $\frac{3.546 \mu\text{s}}{3} = 1.182 \mu\text{s}$

b) AB - CDEFG - H  
21 - 44998 - 2

AEF = 299 kbps  
AEF - A =  $299 - 2 = 297 \text{ kbps}$   
AEF/2 =  $299/2 = 149.5 \text{ kbps}$



Here, pulse stuffing and multilevel data management technique used to adjust the bitrate.

MD. SHAHRIAR PARVEZ SHAMIM

ID: 21-44998-2 Section: I

Answer to the ques no. 3.

①

AB-CDEFG-H  
21-44998-2

occupies bandwidth = 29 KHz = 29000 Hz  
guard bands = 24 Hz

$$\therefore \text{minimum required bandwidth} = 2 \times 29000 + 1 \times 24 \\ = 58024 \text{ Hz (Answer)}$$



⑥ Two voice channel:

