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A  
T

1.  $P(B=T)$  will be summation of all  
 $B=T$  values that is -

$$0.1 + 0.2 + 0.2 = 0.5$$

2. Number of independent parameters

~~$$= \frac{1}{7} * 8 * 4 * 5 * 6 - 1$$~~

~~$$= \frac{6720}{6719} - 1$$~~

2. A : 4, B : 5, C : 6, D : 7, E : 8

$$P(A, B, C | D, E) =$$

No. of parameters required =

$$((4 \times 5 \times 6) - 1)(7 \times 8)$$

$$= (120 - 1) \times 56$$

$$= 6664.$$

3. for  $x_1, x_2 = T, T$ ,  $w_1 = \ln -2$ ,  $w_2 = \ln -3$ ,  $w_3 = \ln -4$   
 $w_4 = \ln -9$ .

$$\phi_1 = e^{-(w_1 f_1 + w_2 f_2 + w_3 f_3 + w_4 f_4)}$$

$$= e^{-(\ln -2 * 1 + \ln -3 * 0 + \ln -4 * 0 + \ln -9 * 1)}$$

$$= e^{-(\ln -2 + \ln -9)}$$

$$= 18$$

$$\phi_3 = e^{-(\ln -2 * 0 + \ln -3 * 0 + \ln -4 * 1 + \ln -9 * 0)}$$

$$= e^{-(-\ln 4)}$$

$$= 4$$

$$\phi_2 = e^{-(\ln -2 * 1 + \ln -3 * 1 + \ln -4 * 1 + \ln -9 * 0)}$$

$$= e^{-(-\ln 9)} = 9$$

$$\phi_4 = e^{-(\ln -2 * 0 + \ln -3 * 0 + \ln -4 * 0 + \ln -9 * 1)}$$

$$= e^{-(\ln -9)} = 9$$

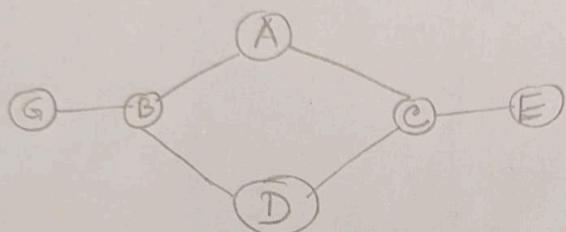
$$z = 18 + 4 + 9 + 9 = 40$$

$$OP(x_1=x_2=T) = 18/40$$

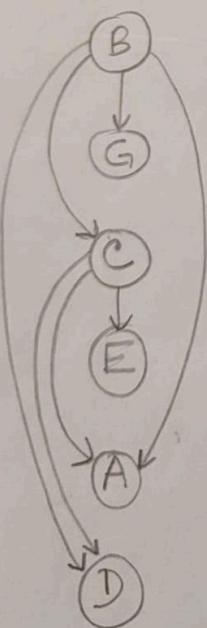
I-Map

- 4.
- (a)  $A + B \rightarrow \text{True}$
  - (b)  $A + B | D \rightarrow \text{True}$
  - (c)  $A + B | E \rightarrow \text{False}$
  - (d)  $E + D \rightarrow \text{False}$
  - (e)  $A + B | H \rightarrow \text{False}$

5.



B, G, C, E, A , D



$$\text{Pa}(B) = \{\emptyset\}$$

$$\text{Pa}(G) = \{B\}$$

$$\text{Pa}(C) = \{B, G\}, \min \text{Pa}(C) = \{B\}$$

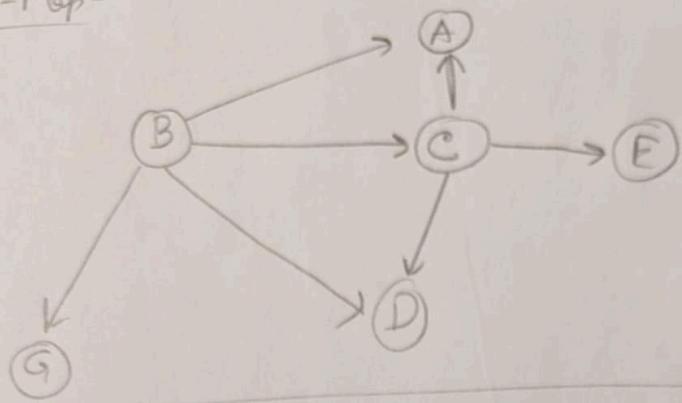
$$\text{Pa}(E) = \{C\}$$

$$\text{Pa}(A) = \{B, C\}$$

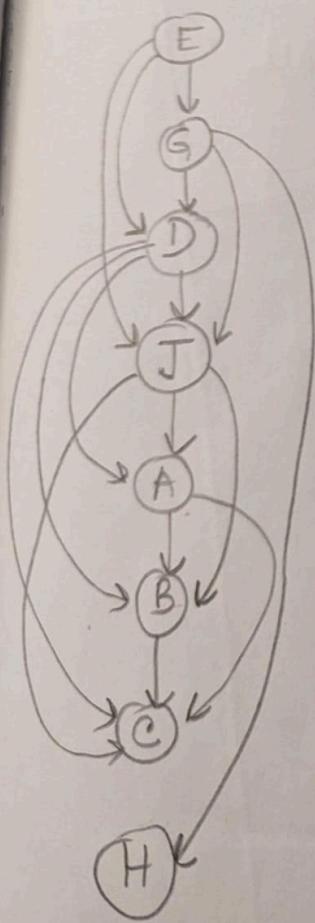
$$\text{Pa}(D) = \{B, C\}$$

6.

I-Map -



6.  $E, G, D, J, A, B, C, H$



$$Pa(E) = \{\emptyset\}$$

$$Pa(G) = \{E\}$$

$$Pa(D) = \{E, G\}$$

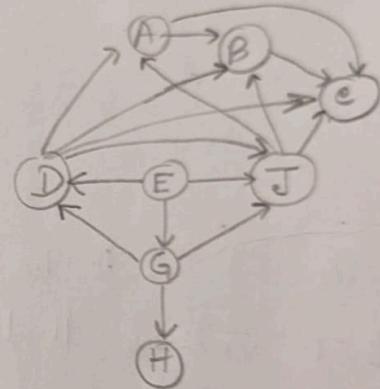
$$Pa(J) = \{D\}$$

$$Pa(A) = \{D, J\}$$

$$Pa(B) = \{A, D, J\}$$

$$Pa(C) = \{A, B, D, J\}$$

$$Pa(H) = \{G\}$$



I-Map