

CSF 230 ASSIGNMENT 3

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SECTION: 03

CSE 230 ASSIGNMENT 3

(1) Total = 18, R = 6, B = 7, G = 5

A = two different colored balls

$\Omega = \{(R, B), (B, R), (R, G), (G, R), (B, G), (G, B)\}$

$$P(A) = \left(\frac{6}{18} \times \frac{7}{18}\right) + \left(\frac{6}{18} \times \frac{5}{18}\right) + \left(\frac{7}{18} \times \frac{6}{18}\right) + \left(\frac{7}{18} \times \frac{5}{18}\right) + \left(\frac{5}{18} \times \frac{6}{18}\right) + \left(\frac{5}{18} \times \frac{7}{18}\right)$$

$$P(A) = \frac{107}{162}$$

B = two balls were red and blue.

$\Omega = \{(R, B), (B, R)\}$

$$P(B) = \left(\frac{6}{18} \times \frac{7}{18}\right) + \left(\frac{7}{18} \times \frac{6}{18}\right)$$

$$P(B) = \frac{7}{27}$$

$$P(A|B) = \frac{P(A \cap B)}{P(B)}$$

$$= \frac{P(B)}{P(A)}$$

$$= \frac{\frac{7}{27}}{\frac{107}{162}}$$

$$= \frac{12}{107} \text{ (Ans)}$$

$$\therefore P(A \cap B) = P(B)$$

77 + 2 = 502 - 5

$$v + u + w = 2 + 3 \text{ --- (iii)}$$

$$23 + u + 2 + u - v = 40$$

$2u - v \approx 13$ — (11)

$$22 + v_2 \quad 23$$

Vol 1

24-volts — (III)

24-1015

U2 8

$$n + u_3 = u - v$$

$$u + w_2 \delta - 1$$

$$x + w = 7 \quad \text{--- (v)}$$

$$h_2 - h + 2 + 3 = 40$$

$$67 = 17$$

227

$$V + U + W = 2 + 3$$

$$1 + 8 + 11 = 7 + 3$$

W21

$$x + 11 = 27$$

५५१२३

No 6

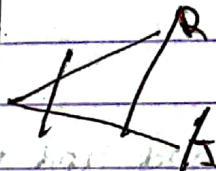
	Good	Avg	Bad	Total
Regular	22	2	8	30
Irregular	1	8	1	10
Total	23	10	9	40

Irregular

P (Bad/Inequal) =

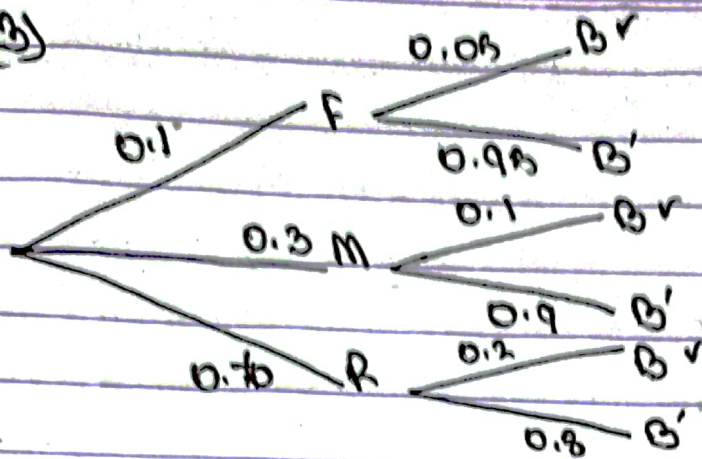
Prüfung 2

P(Bad Image) = $\frac{1}{10}$ (Ans)



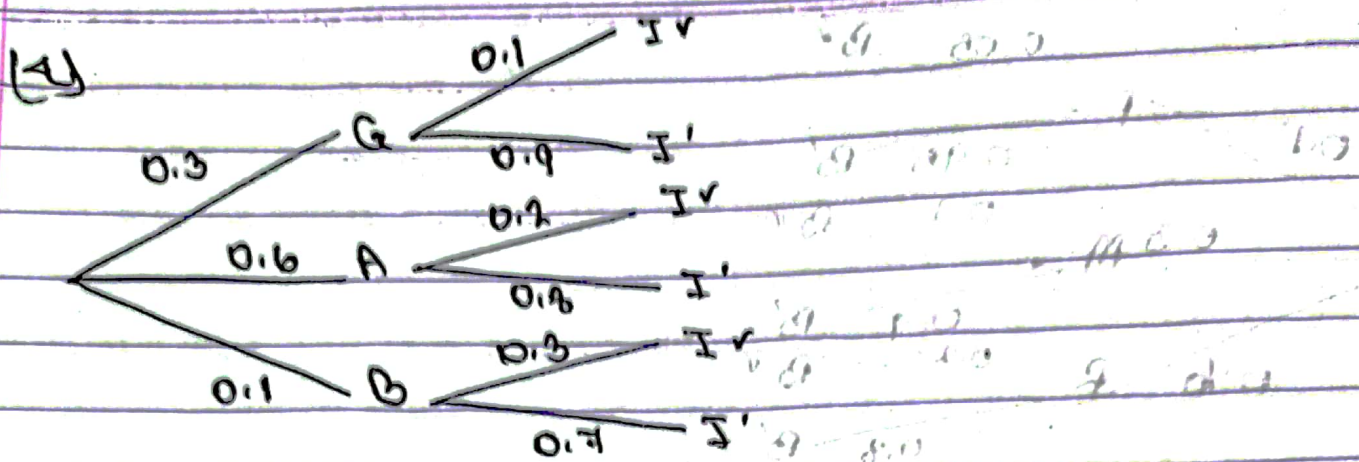
~~$$P(\text{Bad}) = \frac{1}{40}$$~~

(3)

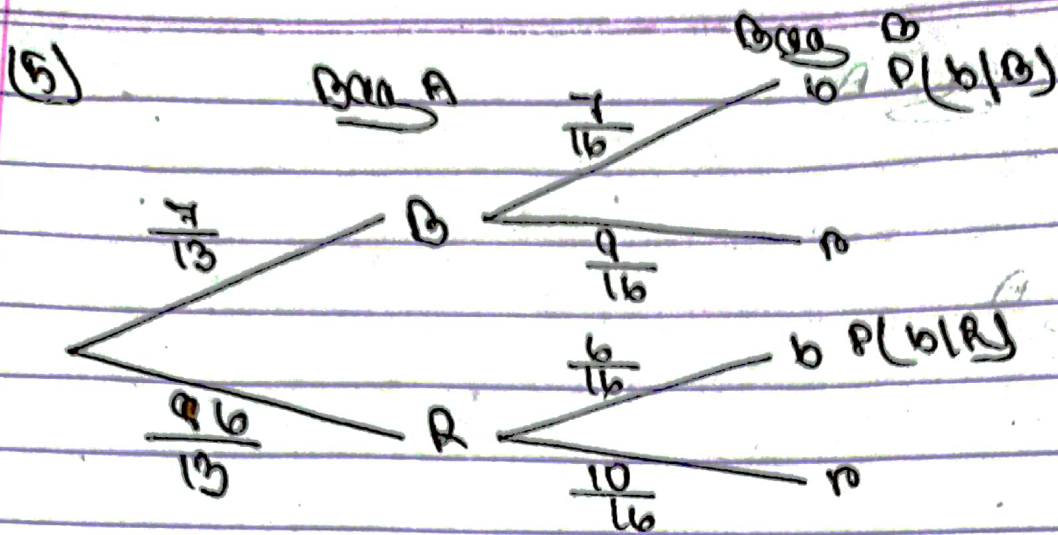


$$P(\text{broken seat}) = (0.1 \times 0.05) + (0.3 \times 0.1) + (0.6 \times 0.2)$$
$$= 0.175 \text{ (Ans)}$$

$$= 0.175 \text{ (Ans)}$$



$$\begin{aligned}
 P(\text{involved in an accident}) &= (0.3 \times 0.1) + (0.6 \times 0.2) \\
 &\quad + (0.1 \times 0.3) \\
 &= 0.18 \text{ (Ans)}
 \end{aligned}$$



$$P(R|B) = \frac{P(B|R) \times P(R)}{P(B|R) \times P(R) + P(B|B) \times P(B)}$$

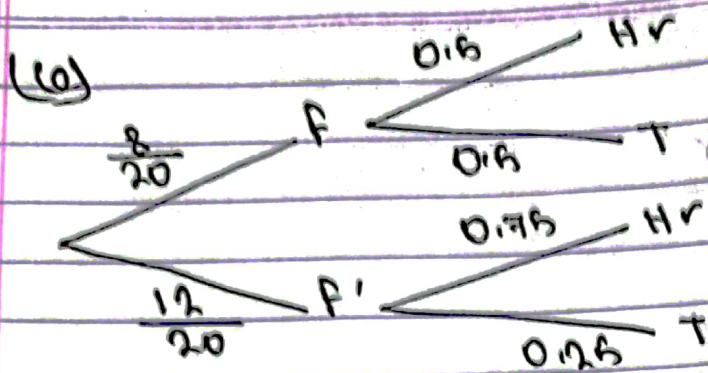
$$= \frac{\left(\frac{6}{16} \times \frac{2}{3}\right)}{\left(\frac{6}{16} \times \frac{2}{3}\right) + \left(\frac{7}{16} \times \frac{1}{3}\right)}$$

$$= \frac{4}{103} \text{ (Ans)}$$

$$= \frac{36}{85} \text{ (Ans)}$$

$$(8) 9 \times (9/10) 9$$

$$(10) 9 \times (9/10) 9 + (9) 9 \times (9/10) 9$$



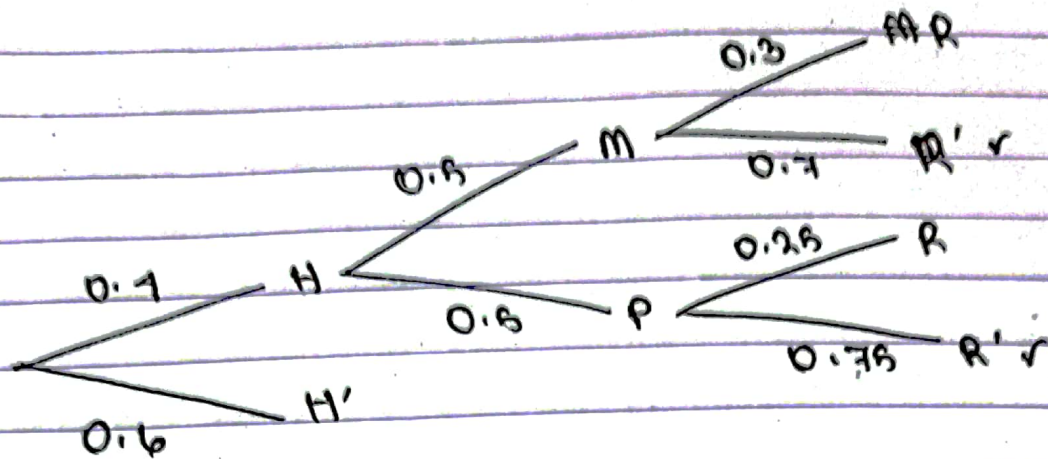
$$P(F' | \text{H out of Q}) = \frac{{}^9C_7 \times P(H) \times \cancel{P(T)} \times \cancel{P(F)}}{P(\text{H out of Q} | F') \times P(F') + P(\text{H out of Q} | F) \times P(F)}$$

$$= \frac{{}^9C_7 \times (0.75)^7 \times (0.25)^2 \times \frac{12}{20}}{({}^9C_7 \times (0.75)^7 \times (0.25)^2 \times \frac{12}{20}) + ({}^9C_7 \times (0.5)^7 \times (0.5)^2 \times \frac{8}{20})}$$

$$= \frac{6561}{7985}$$

$$= 0.81650 \text{ (Ans)}$$

(7)



$$\begin{aligned} P(H|MR') &= \frac{P(MR'|H) \times P(H)}{P(MR'|H) \times P(H) + P(PR'|H) \times P(H)} \\ &= \frac{(0.5 \times 0.5 \times 0.1)}{(0.5 \times 0.5 \times 0.1) + (0.4 \times 0.5 \times 0.75)} \\ &= \frac{14}{29} \text{ (Ans)} \end{aligned}$$