PS7 • Graded

Student

Chetan Hiremath

Total Points

92 / 100 pts

Question 1

7.1 Marginalization and conditioning from a joint distribution		25 / 25 pts
1.1	_ (a)	6 / 6 pts
	→ + 6 pts Correct	
1.2	(b)	6 / 6 pts
	→ +6 pts Correct	
1.3	(c)	6 / 6 pts
	→ +6 pts Correct	
1.4	(d)	7 / 7 pts
	→ +7 pts Correct	

Question 2

7.2 Good news, bad news from doctor

17 / 25 pts

- ✓ 4 pts Missing discussion about results. Is it good news or bad?
- ✓ 4 pts Discussion about the news misses the point on false positive tests

Question 3

7.3 Normalization calculations

25 / 25 pts

→ + 25 pts Correct

Question 4



Question assigned to the following page: <u>1.3</u>

Sor P (Tookhachel (avity) = (0.6, 2-0.6) = (0.6, 0.4).

Question assigned to the following page: <u>1.4</u>

d. P((avity | toothache V (atch) = P((avity 1 (toothache V (atch)))

- 0.208 + 0.022 + 0.072

- 0.208 + 0.022 + 0.072

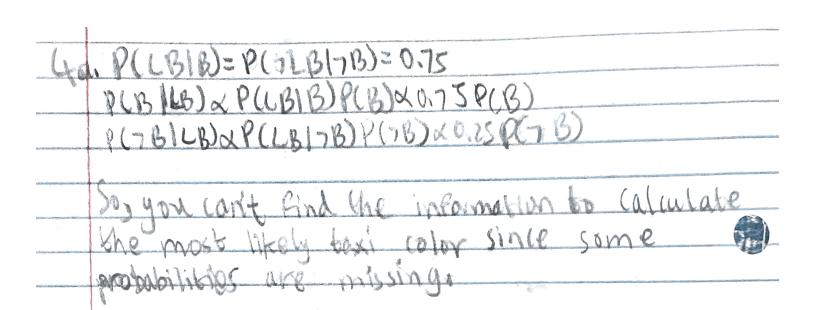
- 0.208 + 0.022 + 0.072

- 0.208 + 0.022 + 0.064 + 0.072 + 0.264

So, P ((avity | toothache V (atch) = < 0.4625, 2-0.4625)

= < 0.4625, 0.5385>.

Question assigned to the following page: 4.1



Question assigned to the following page: 1.1

		totoothache		Toothache	
- The first of a state of the s		Catch	Flatch	Catch	7 Cabon
	(aviby	0.108	0.03.2	0.072	800,0
	7 Cavity	0,036	0.064	10.244	0.576

Question assigned to the following page: 1.1

a PCToothache)= 0. 209+0.02+0.026+0.064=0.2 So, P(Toothache)= (0.2, 2-0.2)= (0.2, 0.8)



2. P(D)= 10000= 0.0001 (Rare Pisease)

P(D)= 1-P(D)=1-0.0001= 0.9999

P(TID)= 0.99 (Test is possitive when I have the disease.)

P(TID)= 1-P(TID)=1-0.99= 0.01

P(TID)=1-P(TID)=1-0.99= 0.01

P(TID)=1-P(TIDD)=1-0.99= 0.01

P(TID)=1-P(TID)P(D)= P(TID)P(D)

P(DIT)= P(TID)P(D)= P(TID)P(D)

0.99(0.0004)

0.99(0.0004)

0.910099=0.009804

Question assigned to the following page: 4.2

b. P(7B)=0,9 (The toxi is green.)

P(B)=1-P(7B)=1-0,9=0,1

P(B|LB) & 0.75 (0.1) & 0.075

P(7BLB) & 0.25 (0.9) & 0.223

P(B|LB)=0.075+0.275=0.25

P(B|LB)=0.075+0.275=0.75

Therefore, the toxi is green even though the toxi looks blue since P(7B|LB) > P(B|LB).

Question assigned to the following page: <u>1.2</u>

b. P (Cavity) = 0.208+0.032+0.072+0.008=0.2 86, P (Cavity) = (0.2, 2-0.2) = (0.2,0.8).

