CS583 - Assignment 2 Solutions
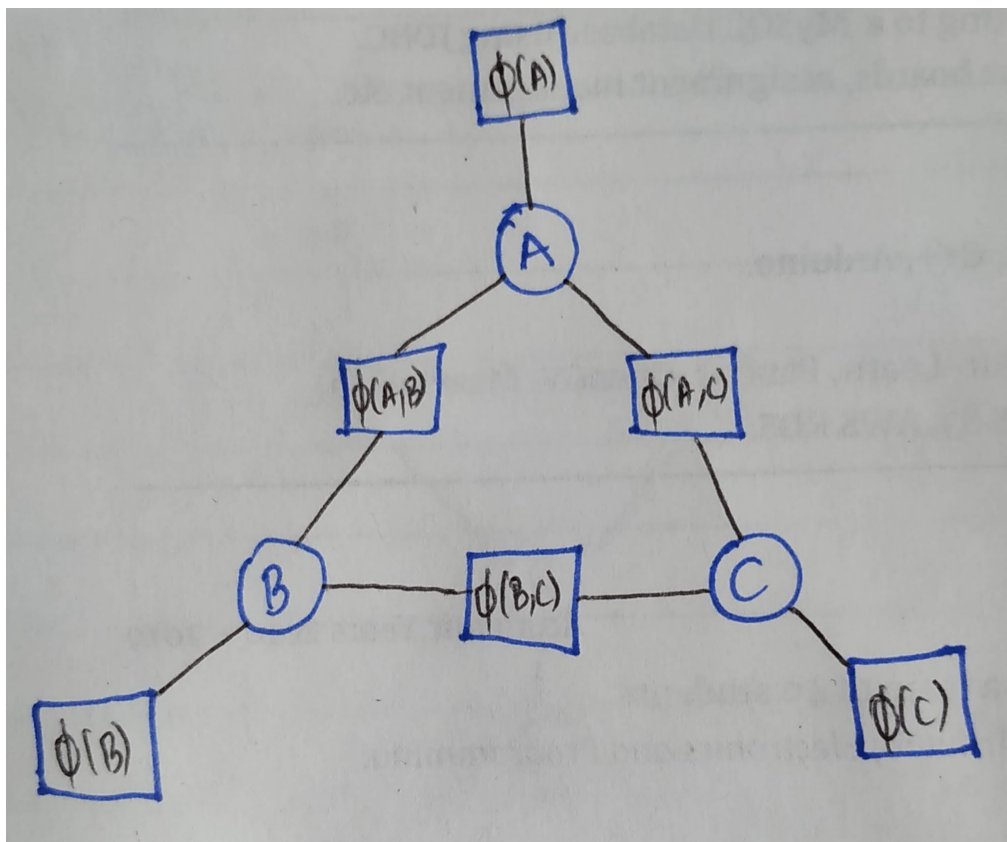
Question 1

Part a
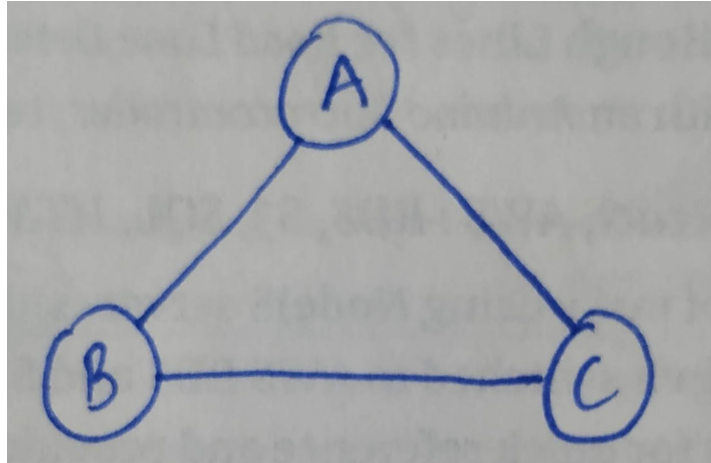
Part b

Part c

A	B	C	Product of all factors	P(A,B,C)
T	T	T	60	0.0197
T	T	F	800	0.2627
T	F	T	480	0.1576
T	F	F	64	0.021
F	T	T	1	0.0003
F	T	F	480	0.1576
F	F	T	200	0.0657
F	F	F	960	0.3153
			SUM = 3045	**0.9999**

Refer [this spreadsheet](#)(sheet 1) for detailed calculations

Question 2

1. False
2. True
3. False
4. True
5. True

Question 3

MAP Assignment : (Y1, Y2, Y3, Y4) = (AI, AI, DB, DB)

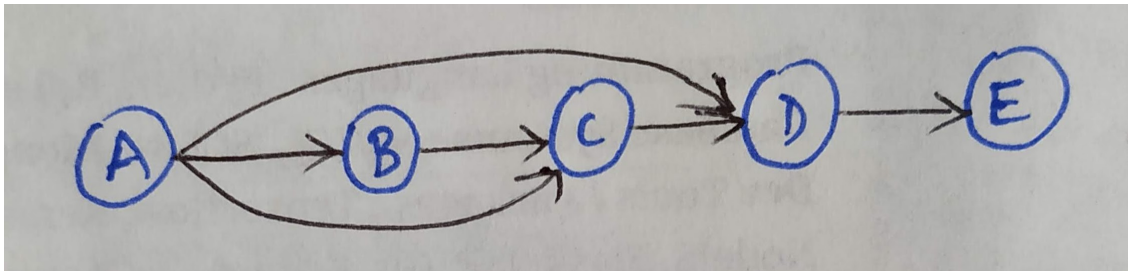Refer [Spreadsheet](#), Sheet 2

Question 4

Part a

$B \not\perp A$

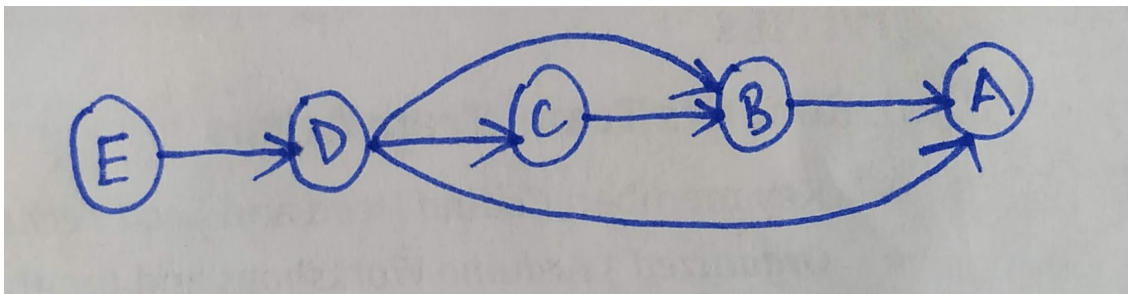$C \not\perp A, B$

$D \perp B | A, C$
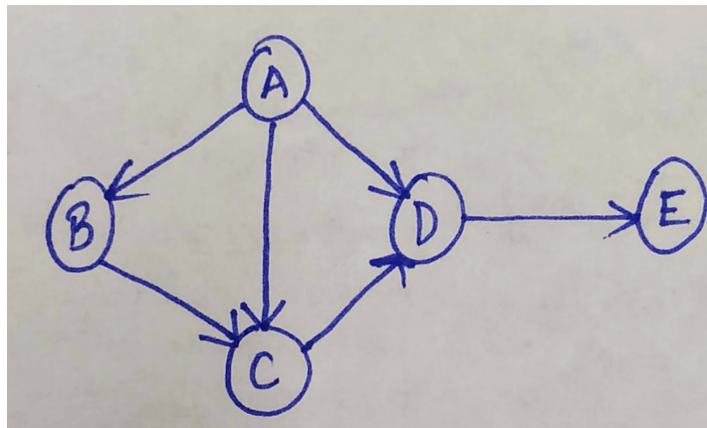
$E \perp A, B, C | D$

Part b

$D \not\perp E$
$C \perp E | D$
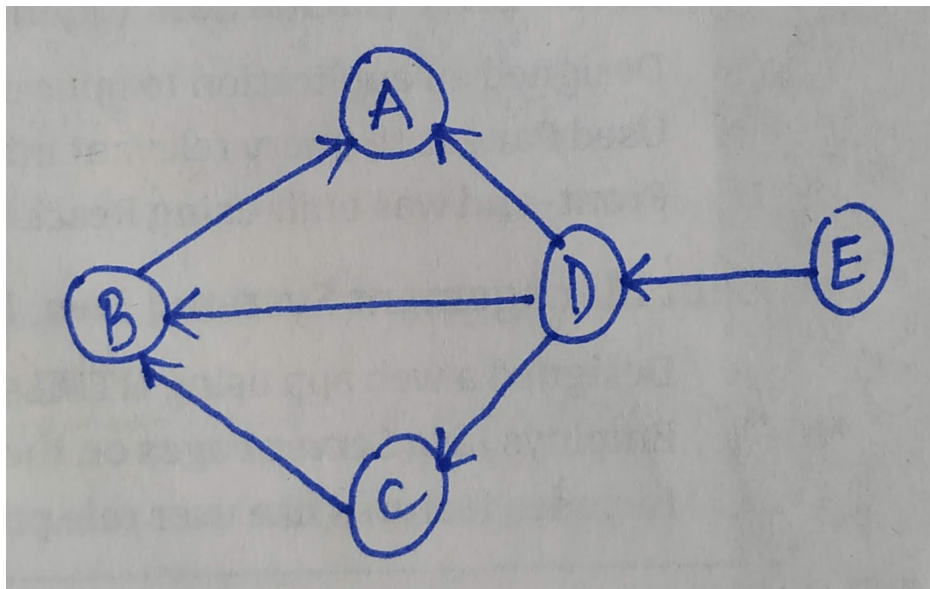$B \perp E | D, C$

$A \perp C, E | B, D$

Part c

No, Missing $A \perp C | B, D$

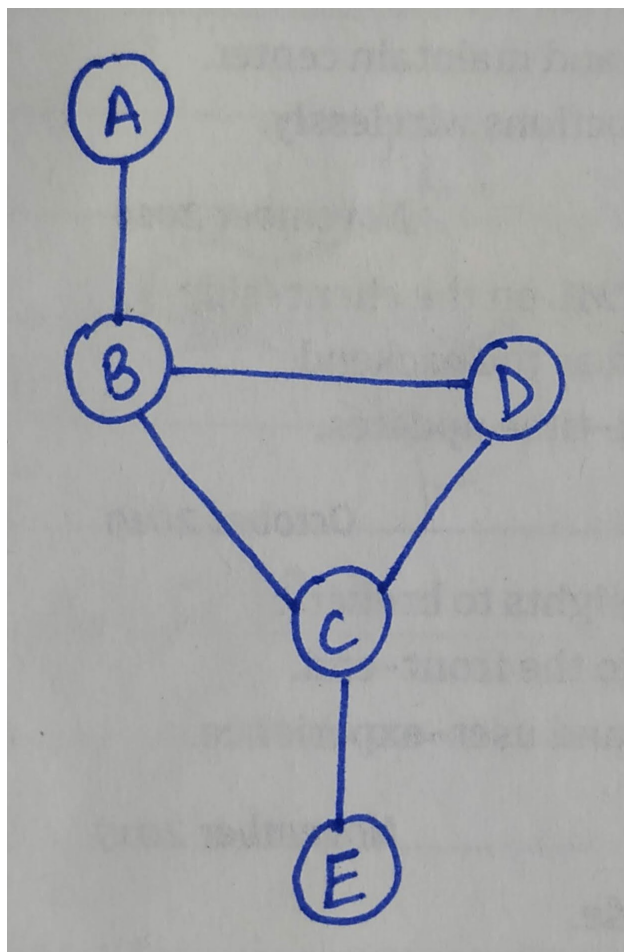**Part d**

No, Missing $B \perp D, E | A, C$

Question 5

Part a

Part b

No, Missing independencies are :

$B \perp D$
$A \perp D$