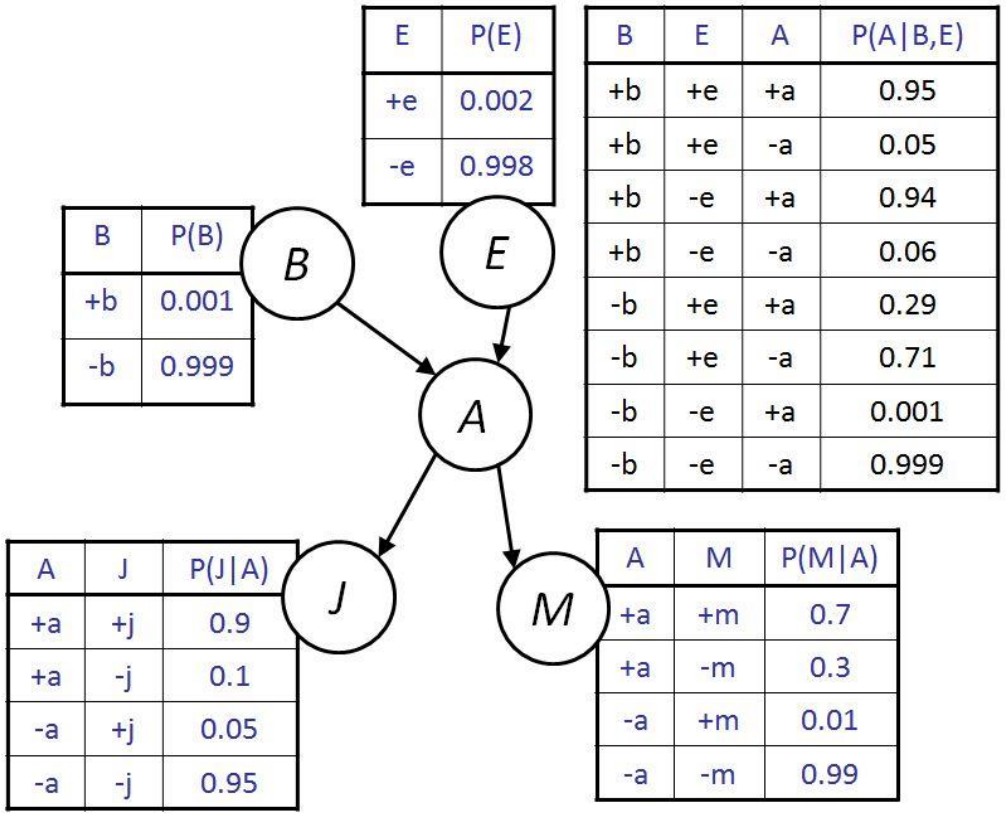
CSE 317 (July 2021) CT – 3

1. Calculate P(E | -b, +m) from the Bayesian network shown below. (12)



E	P(E)
+e	0.002
-e	0.998

B	P(B)
+b	0.001
-b	0.999

B	E	A	P(A|B,E)
+b	+e	+a	0.95
+b	+e	-a	0.05
+b	-e	+a	0.94
+b	-e	-a	0.06
-b	+e	+a	0.29
-b	+e	-a	0.71
-b	-e	+a	0.001
-b	-e	-a	0.999

A	J	P(J|A)
+a	+j	0.9
+a	-j	0.1
-a	+j	0.05
-a	-j	0.95

A	M	P(M|A)
+a	+m	0.7
+a	-m	0.3
-a	+m	0.01
-a	-m	0.99

2. What are the techniques of inference in a Bayesian network? Where do they differ? (4)

3. What is the intuition behind the random variables denoting causes to be dependent if their common effect is observed in a Bayesian network? (4)