Answer ALL the questions on the question paper itself in the spaces provided.
Do all rough work on on the blank page included in the questions paper.

1. Consider the following incompletely specified finite state machine.

PS	NS,z			
	I_1	I_2	I_3	I_4
A	B,0	—,—	—,—	E,1
B	A,0	C,—	—,—	—,—
C	C,0	A,1	D,1	E,—
D	—,—	B,—	—,—	A,—
E	C,—	B,1	F,—	—,0
F	F,1	A,—	E,—	B,—

(a) Minimise the above FSM showing the steps   10

(b) Choose a state and input encoding for the minimised states   5

(c) Construct the optimised next state and the output functions for the minimised FSM for the chosen state encoding   5×3

(d) The minimised FSM has to be realised using JK flip flops; construct the required excitation functions for the flip flops   5×2