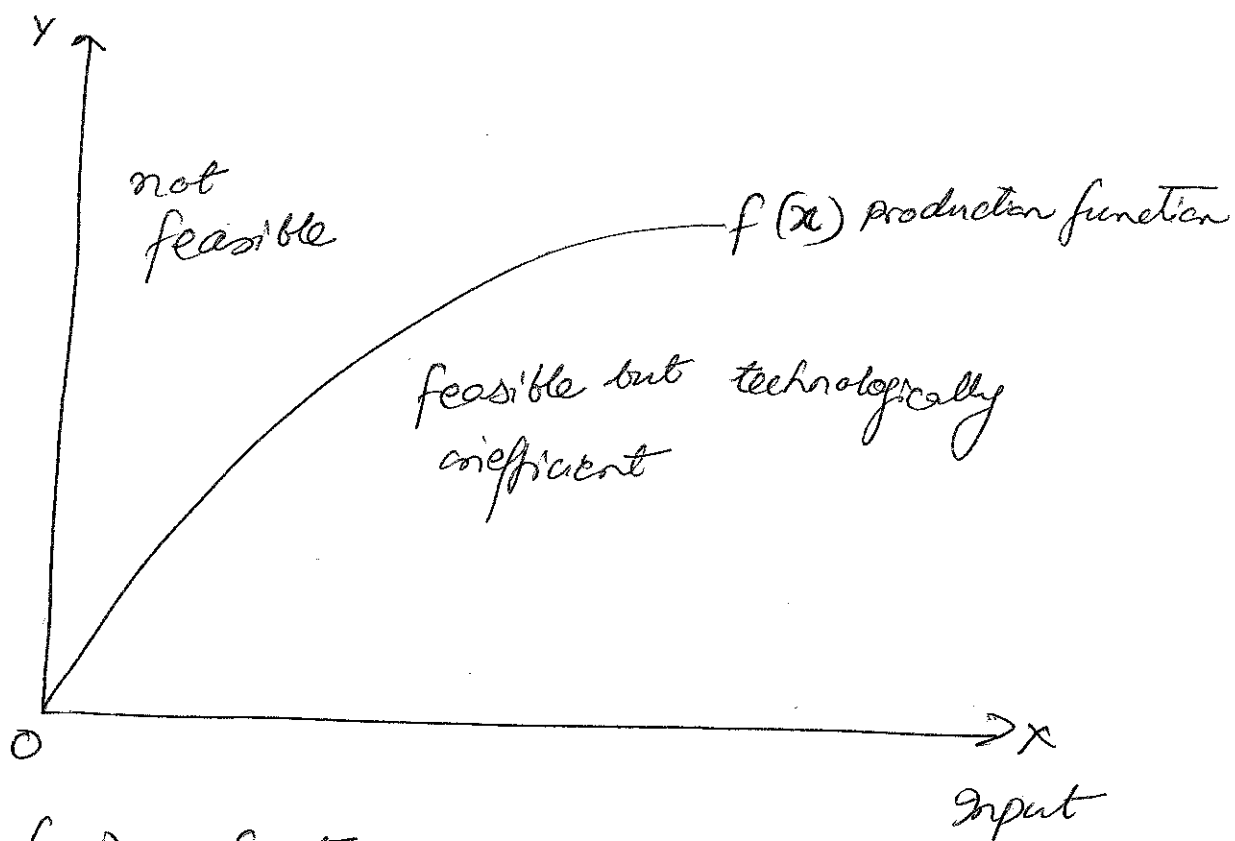


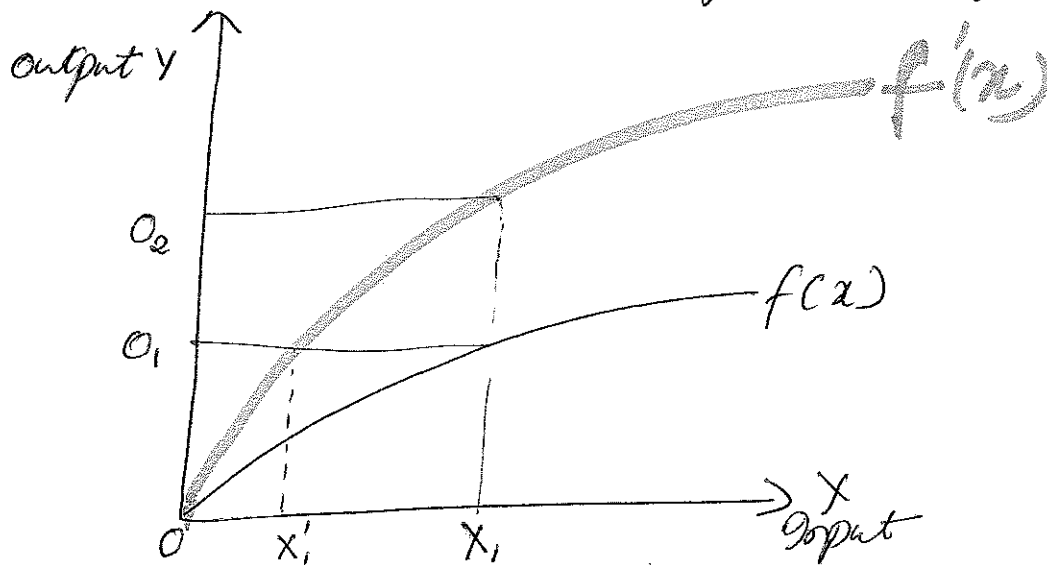
Ans 1(a)
(Output)



$f(x)$ → frontier of technological efficiency

Ans (b) $f(x)$ - initial production function

$f'(x)$ → production function after technological progress



Impact of technological progress

(2)

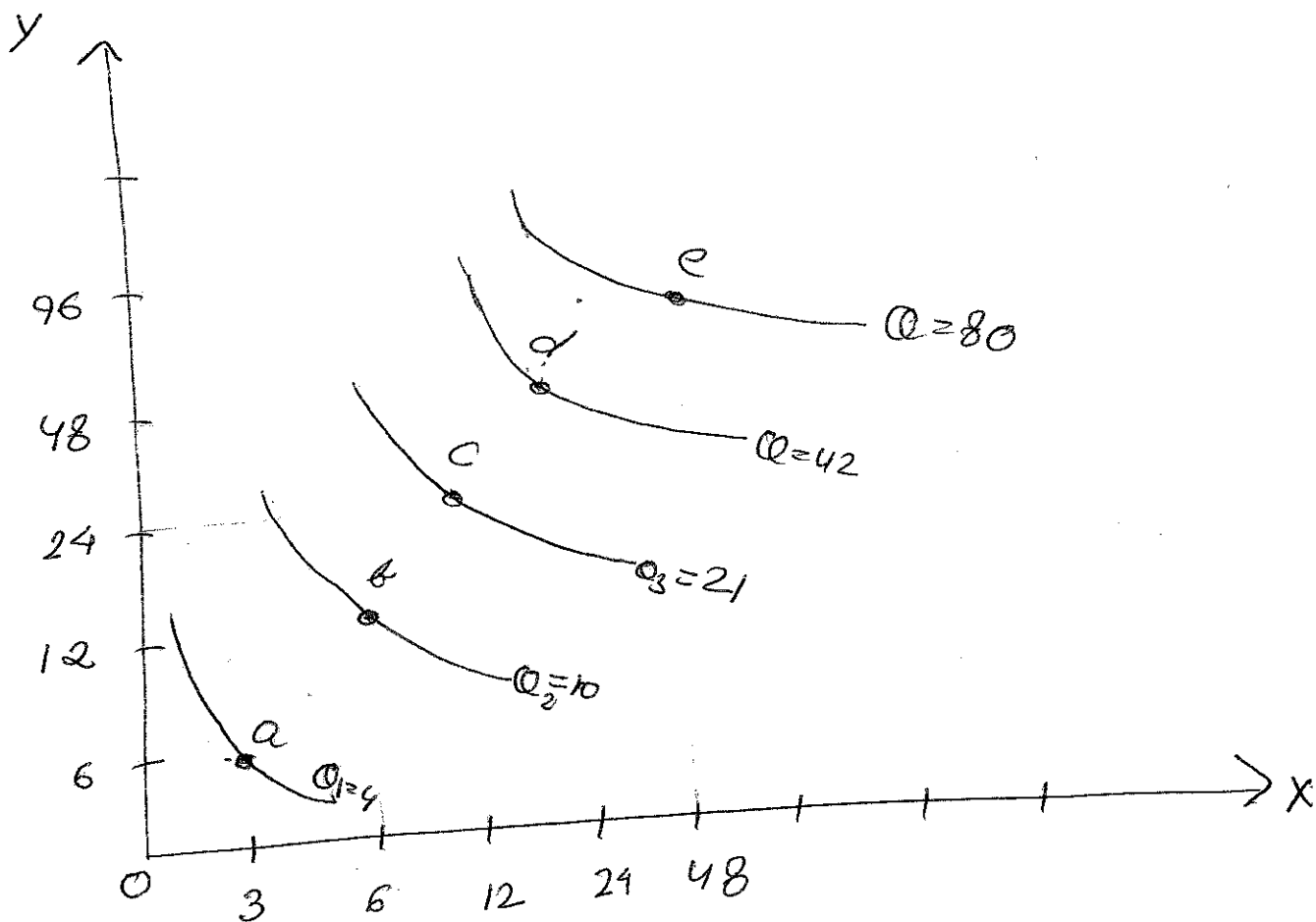
(a) Higher output using the same level of input
using X_1 , the output level has increased from O_1
to O_2

OR

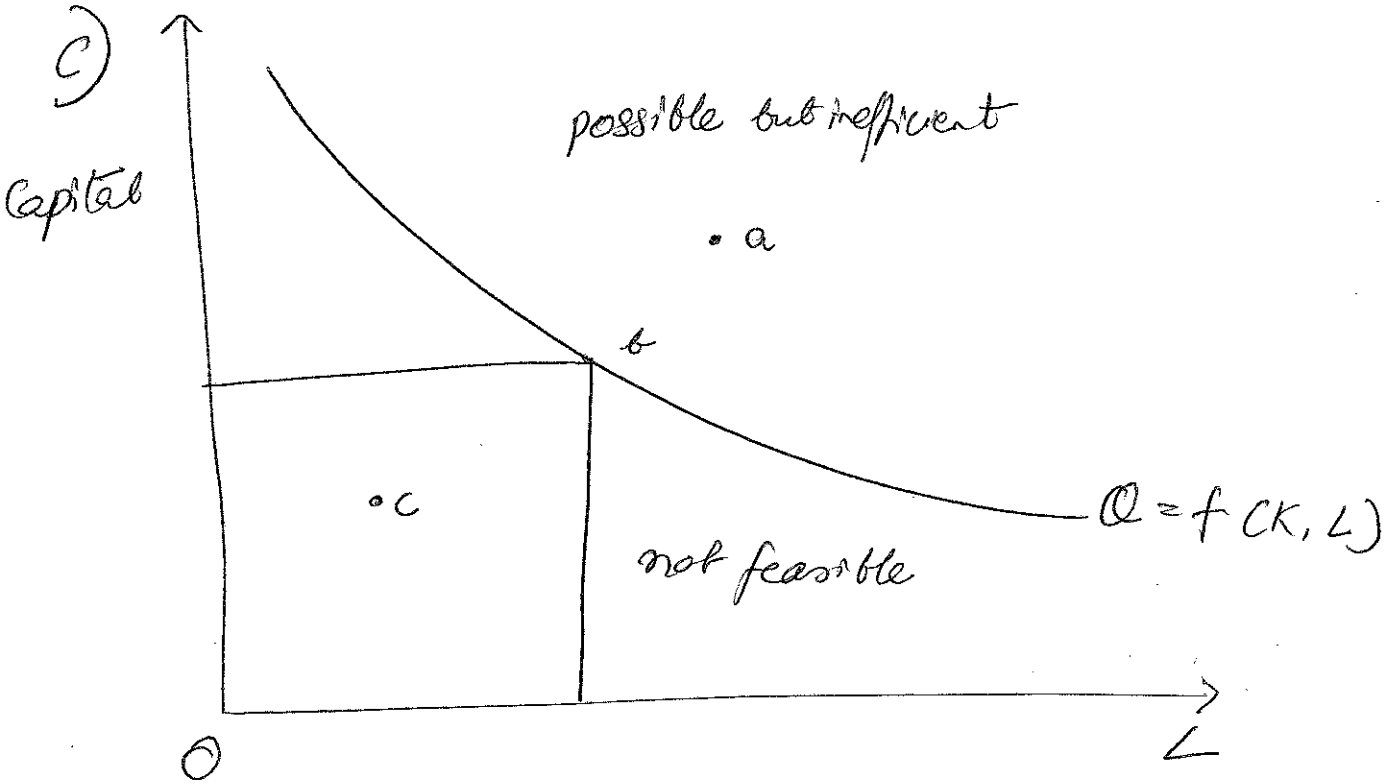
(b) the same output can be used produced
using lesser input
initially X_1 was required to produce O_1
but now lesser input is needed (X_1') to
produce same O_1

As 2

Points	labor	Δ labor	Capital	ΔK	Output	Δ Output
A	3		6		4	
B	6	3	12	6	10	6
C	12	6	24	12	21	11
D	24	12	48	24	42	21
E	48	24	96	24	80	38



- (b) i) From (a) to (b) \rightarrow increasing returns to scale
 ii) From (b) to (c) \rightarrow increasing returns to scale
 iii) From (c) to (d) \rightarrow constant returns to scale
 iv) From (d) to (e) \rightarrow decreasing returns to scale

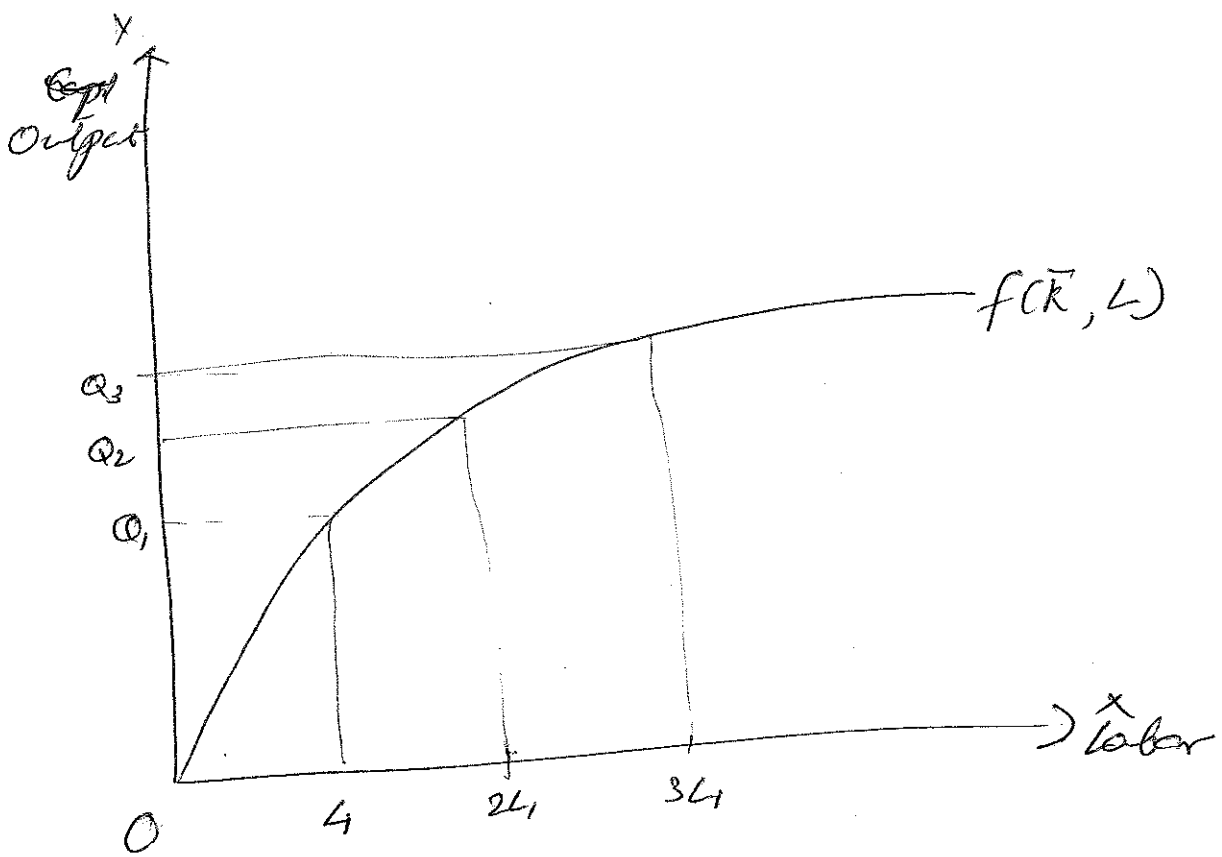


we cannot produce output Q using input bundle (c) \rightarrow not technologically feasible

using (a) input bundle we can produce a lower level of output but it would be inefficient

Ques 3 Marginal product - addition to total product using one ~~or~~ more units of input, ceteris paribus

Average Product - product per unit of input.
It is total output divided units of input used.



Ques 4

Condition A	Condition B	
a) MRT is perfectly competitive	Firm is a price taker	B → A
b) The firm is a price taker	The mkt is perfectly competitive	N, NS
c) Felix hates baths	Felix is a cat	S, NN
d) The last dollar rule is satisfied	$MRS = MRT$ at a bundle	S, NN
e) MP is above AP at q	Q is upward sloping	N, S

Condition A

Condition B

(6)

f) A student is enrolled in this class

A student is enrolled in SU/ESP

N, NS

g) one can get from here to NYC

Az Limo has a daily service to NYC

S, NN

h) A firm is producing in a technologically efficient manner

A firm is producing in production function

N, S