



Complete, fold and seal
(see note 2 below)

FORENAME(S): JOSHUA

12 Pages

1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fold over and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either ignore illegible script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
8. **Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.**

[illegible]

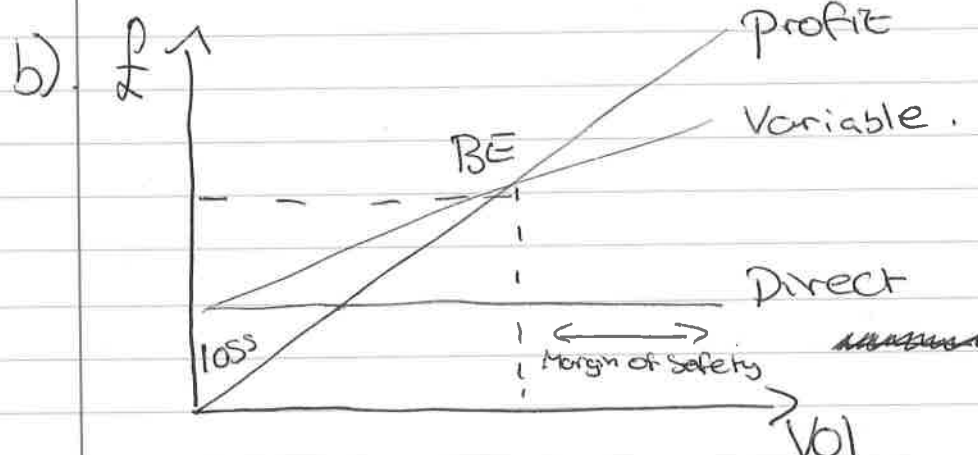


Section A

1)
a) $BE = \frac{\text{Fixed}}{\text{Selling Price} - \text{Variable}}$

$$= \frac{500,000}{£20 - £7} = 38461.54$$

= 38461 units to break even.



c) $500,000 \times 0.75 = £375,000$

fixed costs don't change

~~$\frac{£60,000}{£20} = 3,000 \text{ units}$~~ ~~$\frac{£60,000}{£7.75} = 7,742$~~

$$\frac{375,000}{20 - 7} = 28,846.15$$

~~$\frac{£60,000 \times £20}{£7.75} = £1,200,000$~~

~~$\frac{£1,200,000 - £375,000}{£7.75} = £158,593.69$~~

$$\frac{£375,000}{(20 - 7)} = 28846.15$$

$$\begin{aligned} &38461.54 - 28846.15 \\ &= 9615.39 \times 20 \\ &= £192,307 \text{ profit} \end{aligned}$$

c) ~~Handwritten scribbles~~
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$$60,000 \times 20 = 1200000$$

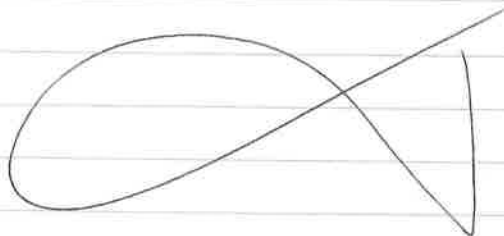
$$40,000 \times 20 = 800000$$

$$\underline{\pounds 400,000}$$

typed e) $\frac{1}{3}$

$\frac{9}{25}$

~~Handwritten scribbles~~
 (6)
 d)



Wen

Q7)

i)

By doing these changes, the city and county of Swansea are making it environmental friendly by introducing hybrid diesel electric buses. This will create a high performance to others and make them use buses as transportation. By doing these changes they are making the environment better around us and promoting it to those individuals who are very eco-friendly. The hybrid diesel electric buses will increase its social use while upgrading its technology following trends.

$\frac{2\frac{1}{2}}{4}$

ii)

Political

- There may be some regulations or laws to follow as diesel engines will be no longer, however they are trying to change that and showing how they can reduce the emissions and create it more eco-friendly for transportation.
- There may be some Ethical things to follow.
- Environmental friendly

$\frac{2\frac{1}{2}}{4}$

Economic

- Costs and rates.
- Saving the environment
- High mpg, good for commuting to places

$\frac{2\frac{1}{2}}{4}$

Social

- Following trends which others are following, such as eco-friendly
- Create awareness, media, TV, advertisement.
- Targeting Eco individuals

$\frac{2\frac{1}{2}}{4}$

Technology

- Increasing their use of technology
- Creating hybrid, electrical and diesel buses
- How it will impact the world
- Less emissions

$\frac{1\frac{1}{2}}{4}$

iii)

I would advise the city and county of Swansea to do this potential adoption of some hybrid buses because it will increase social factors in which saves the environment and makes it more eco-friendly. Following how laws are changing this would be a great way to show how you can create a hybrid diesel bus which can commute at a safe emission rate which doesn't pollute the world. This can be a great trend to act upon as the social use of transport is against vehicles however, making it more eco-friendly will create a huge impact on Swansea and bring more popularity to the city. Which means more people will be transporting on your hybrid buses.

$\frac{3}{5}$

$\frac{13\frac{1}{2}}{25}$

Handwritten signature

Q1)

e)

By using the breakeven analysis, the limitations are;

- Fixed selling price on each unit.
- The variable is fixed so can only have a certain margin of profit and cannot exceed or lower those expectations
- Buying direct is fixed, no margin for discounts or incentives.
- You only break even when you reach a certain amount of units that have been sold.

$\frac{1}{5}$

Q6)

a)

The concept of total quality management.

- No room for error, always improving problems going on. ✓
- Making sure your surroundings and place is driving and giving people incentives to do the best quality of work. ✓
- Create an environment where people are driven to create best possible work they can do. ✓
- Allowing the finished product to have no errors and no problems, investigations carried out to allow finished products to be at its best quality

$\frac{2}{5}$

b)

Juran's 10 Steps.

- Building awareness of what's going on ✓
- Outline the problem ✓
- Solve the problem ✓
- Try to improve any errors ✓
- Give the individual an appraisals for solving the problem ✓
- Making sure everyone knows about what's going on ✓
- Communication
- Team work

$\frac{3}{6}$

c)

- Major room for error
- Always trying to solve problems and trying to improve it

$\frac{1}{3}$

d)

- Inspect parts, possible seal leak of valve leak.
- Make sure everything is tight and compressed properly
- Make sure no oil leaks through the valve
- Replace parts which are faulty
- Design or analysis results may be wrong so carry out more results.

$\frac{1}{11}$

$\frac{8}{25}$

6) See sheet

Question No.

Examine

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