ANSWERS TO SELF ASSESSMENT QUESTIONS
RSK2601
PARAGRAPH QUESTIONS AND CALCULATIONS

Question 1 (10)

PREMISES A

OUTCOME	AMOUNT OF LOSS	PROBABILITY OF OUTCOME	EXPECTED VALUE (R)	DEVIATION	SQUARED DEVIATION(R)
A	R10 000	0.80	8 000	-1 000	1 000 000
B	R15 000	0.20	3 000	4 000✓	16 000 000
			11 000✓		17 000 000✓

Variance   =   R17 000 000/2

                             R8500000✓

Standard deviation   =   √8500000

                    =   R2915.47595

                    =   R 2915.48✓

Coefficient of variation =   Standard deviation /Expected value

                    =   R2915.48/R11000

                    =   0.2650✓

PREMISES B

OUTCOME	AMOUNT OF LOSS	PROBABILITY OF OUTCOME	EXPECTED VALUE (R)	DEVIATION	SQUARED DEVIATION(R)
A	R10 000	0.50	5 000	-2 500	6 250 000
B	R15 000	0.50	7 500	2 500✓	6 250 000
			12 500✓		12 500 000✓

Variance   =   R12 500 000/2

                             R6250000✓

Standard deviation   =   √6250000

                      =   R2500 ✓

Coefficient of variation =   Standard deviation /Expected value

                          =   R2500/R12500

                          =   0.2 ✓

CV of Premises A = 0.2650 and that of Premises B is 0.2

Premises A is more risky than Premises B because the coefficient of variation is higher than that of B. ✓

High risk, high returns for A

Question 2 (10)

Risk evaluation is probably one of the most difficult steps of a risk management process. It is therefore, important to use the correct methodology. Briefly provide your understanding of the following concepts relating to risk evaluation:

- Maximum possible loss   (3)
- Normal loss expectancy   (3)
- "As if" analysis   (4)

a. **Maximum possible loss –** maximum possible ✓ loss that can occur from a single event under unfavourable conditions. ✓ Unfavourable conditions imply that risk control measures did not operate as planned and that the loss was therefore not controlled. ✓

Example:

The MPL of a building is equal to the total replacement cost of, say, R10 million. In case of fire it is assumed that the entire building will be destroyed. The assumption is that the risk control measures such as a sprinkler system will not function properly. The entire building will therefore be destroyed in the event of a fire

b. **Normal loss expectancy –** maximum loss✓ that can occur from a single event when all control measures operate as expected. ✓

Example, the normal loss expectancy of a building valued at R10 million is, say, only R2 million because we assume here that the risk control measures will function properly and that the fire will be extinguished before the entire building is destroyed. ✓

c. **As-if analysis** – analysis of the past claims history of the organisation. ✓ Such an analysis can be carried out on one of two bases:

- Actual data✓ - The claims or losses incurred are evaluated without applying any inflationary adjustment.
- Projected data✓ - The actual claims history is adjusted for inflationary trends as well as changes in the "scale of risk" before the "as if" analysis is carried out.

Question 3

3.1 You are the risk manager for South African Airways (SAA). You expect the price of oil to increase over the next year and decide to make use of futures contracts to hedge this risk. Graphically illustrate the concept of a perfect hedge for purposes of managing the risk of an increase in the price of oil.

The perfect hedge (5)
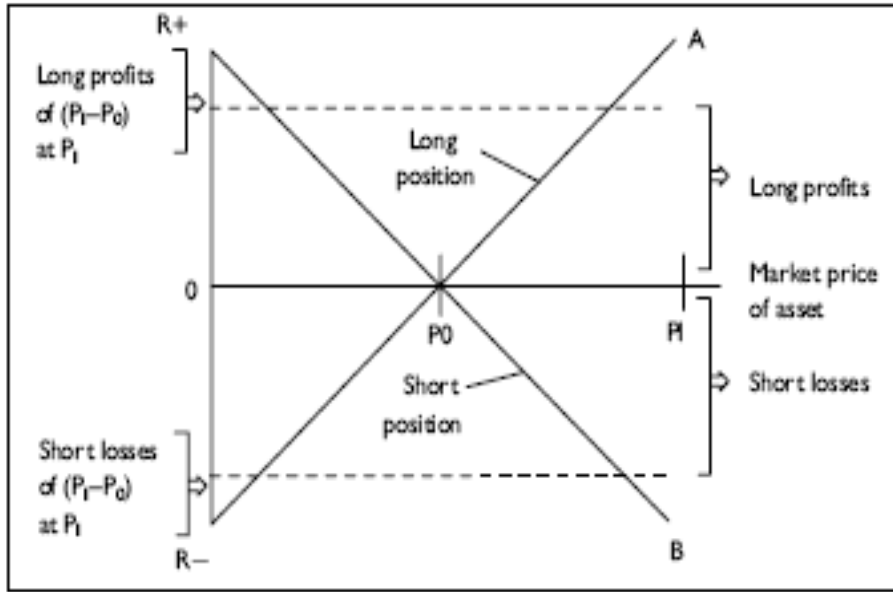
3.2 Explain how organisational charts may be used by a risk manager to identify risks. (5)

Answer

- Assess the extent to which control is centralised or decentralised✓.
- Assess the degree of **autonomy** given to managers at different levels of **authority**. ✓
- Indicate how different sections of the organisation are accountable for any losses they incur✓
- Identification of key personnel, the loss of whose services may adversely affect operations ✓
- Indicates reporting structures✓