

- 2 The Equine Management Academy (EMA) which was founded in 1990 is a privately owned organisation located in Hartland, a developing country which has a large agricultural sector and where much transportation is provided by horses. EMA operates an Equine College which provides a range of undergraduate and postgraduate courses for students who wish to pursue a career in one of the following disciplines:

Equine (Horse) Surgery
Equine Dentistry, and
Equine Business Management.

The Equine College which has a maximum capacity of 1,200 students per annum is currently the only equine college in Hartland.

The following information is available:

- (1) A total of 1,200 students attended the Equine College during the year ended 31 May 2010. Student mix and fees paid were as per the following table:

Student category	% of total number of students	Fee (\$) per student, per annum
Surgery	30	12,000
Dentistry	25	10,000
Business Management	45	6,000

- (2) Total operating costs (all fixed) during the year amounted to \$6,500,000.
- (3) Operating costs of the Equine College are expected to increase by 4% during the year ending 31 May 2011. This led to a decision by the management to increase the fees of all students by 5% with effect from 1 June 2010. The management expect the number of students and the mix of students during the year ending 31 May 2011 to remain unchanged from those of the year ended 31 May 2010.
- (4) EMA also operates a Riding School at which 240 horses are stabled. The Riding School is open for business on 360 days per annum. Each horse is available for four horse-riding lessons per day other than on the 40 days per annum that each horse is rested, i.e. not available for the provision of riding lessons. During the year ended 31 May 2010, the Riding School operated at 80% of full capacity.
- (5) Horse-riding lessons are provided for riders in three different skill categories. These are 'Beginner', 'Competent' and 'Advanced'.

During the year ended 31 May 2010, the fee per riding lesson was as follows:

Skill category of horse rider	Lesson mix	Fee (\$) per lesson
Beginner	50%	15
Competent	25%	30
Advanced	25%	50

- (6) Total operating costs of the Riding School (all fixed) amounted to \$5,750,000 during the year ended 31 May 2010.
- (7) It is anticipated that the operating costs of the Riding School will increase by 6% in the year ending 31 May 2011. The management have decided to increase the charge per lesson, in respect of 'Competent' and 'Advanced' riders by 10% with effect from 1 June 2010. There will be no increase in the charge per lesson for 'Beginner' riders.
- (8) The lesson mix and capacity utilisation of the Riding School will remain the same during the year ending 31 May 2011.

Required:

- (a) Prepare a statement showing the budgeted net profit or loss for the year ending 31 May 2011. (7 marks)

2 (a) Budgeted Income Statement for the year ended 31 May 2011

		\$	\$
Equine College:			
Fee income – Working (1)	Student category:		
	Surgery	4,536,000	
	Dentistry	3,150,000	
	Business Management	3,402,000	11,088,000
Operating costs			(6,760,000)
Budgeted profit of Equine College			4,328,000
Riding School:			
Fee income	Rider category:		
	Beginner	1,843,200	
	Competent	2,027,520	
	Advanced	3,379,200	7,249,920
Operating costs			(6,095,000)
Budgeted profit of Riding School			1,154,920
Budgeted profit of EMA			5,482,920

Workings:

- (1) Equine College fee income:
e.g. Surgery
Number of students (30% x 1,200) = 360
Fee per student 12,000 x 1.05 (\$) 12,600
Budgeted Fee income (\$) 4,536,000

- (2) Riding School fee income

	Number of lessons	Charge per lesson (\$)	Fee income (\$)
240 horses x 4 per day x 320 days x 80% =	245,760		
Beginner (50%)	122,880	15	1,843,200
Competent (25%)	61,440	(30 x 1.1) = 33	2,027,520
Advanced (25%)	61,440	(50 x 1.1) = 55	3,379,200
			7,249,920

(b) (i)

% change in fee income	Probability	Lesson capacity	Probability	Combined probability	Equine College revenue \$	Riding School revenue \$	Total costs \$	Net profit \$	Expected value of net profit \$
No change	0.20	90%	0.10	0.02	11,088,000	8,156,160	12,855,000	6,389,160	127,783
		80%	0.60	0.12	11,088,000	7,249,920	12,855,000	5,482,920	657,950
		70%	0.30	0.06	11,088,000	6,343,680	12,855,000	4,576,680	274,601
Decrease by 10%	0.60	90%	0.10	0.06	9,979,200	8,156,160	12,855,000	5,280,360	316,822
		80%	0.60	0.36	9,979,200	7,249,920	12,855,000	4,374,120	1,574,683
		70%	0.30	0.18	9,979,200	6,343,680	12,855,000	3,467,880	624,218
Decrease by 20%	0.20	90%	0.10	0.02	8,870,400	8,156,160	12,855,000	4,171,560	83,431
		80%	0.60	0.12	8,870,400	7,249,920	12,855,000	3,265,320	391,838
		70%	0.30	0.06	8,870,400	6,343,680	12,855,000	2,359,080	141,545
				1.00					
								Expected value of profit =	4,192,872

- (ii) The use of expected values takes into account the relative likelihood of each of the possible outcomes occurring. The expected value of \$4,192,872 is not one of the potential outcomes in the table, but is the weighted average of those outcomes. The use of expected values by the management of EMA implies that they have a risk-neutral attitude. A risk neutral decision-maker will ignore the variability in the range of potential outcomes and will be concerned only with the expected value of outcomes.

- (iii) Possible reasons why the government of Hartland has decided to open an academy comprising an equine college and a riding school are as follows:

EMA operated the only Equine College in Hartland and operated at full capacity during the year ended 31 May 2010. This could well be an indication that the demand for equine specialists in Hartland exceeds the available supply.

Much transportation in Hartland is provided by horses and this might therefore account for the fact that the Equine College operated by EMA is currently operating at full capacity. It is reasonable to assume that the more that horses are used for transportation then the greater will be the need for specialists such as equine veterinary surgeons.

The government of Hartland 'actively promotes environmental initiatives' and therefore it might well be the case that it discourages the use of petrol and diesel propelled vehicles for both social and business purposes.

Hartland is a developing country which has a large agricultural sector and therefore it is probable that horses are used in day-to-day operations e.g. farming.