

FOUNDATION DIPLOMA/CERTIFICATE
Assignment II (02/03)

Module Title : Foundation Mathematics
Module Code : CMV6111
Hand out : Week 25
Hand in : Week 27

Section A Multiple Choice (20 marks)

Answer ALL questions in this section.. Each question carries 4 marks.

1. $\sin 234^\circ =$
 - A. $\cos 54^\circ$
 - B. $\sin 54^\circ$
 - C. $-\sin 54^\circ$
 - D. $-\cos 54^\circ$

2. The 5th term of the arithmetic sequence 7, 3, -1, ... is
 - A. -9
 - B. -12
 - C. -15
 - D. -16

3. The ratio of $\tan 45^\circ$ to $\sin 30^\circ$ is
 - A. 2.000
 - B. 1.500
 - C. 1.414
 - D. 0.866

4. Which one of the following is a G.P.?
 - A. 3, 4, 5, 6, ...
 - B. $1^2, 2^2, 3^2, 4^2, \dots$
 - C. -10, 40, 90, 140, ...
 - D. 40, -20, 10, -5, ...

5. The number of solutions for the equation $2\sin^2 x + 1 = 0$ for $0^\circ < x < 360^\circ$ is
 - A. 1
 - B. 2
 - C. 3
 - D. 4

Section B Short Questions (40 marks)

Answer ALL questions in this section. Each question carries 10 marks.

6. A sector has a radius 5 cm and arc length 8 cm.
- (a) Find the sector angle. (4 marks)
 - (b) Find the area of the sector. (6 marks)
7. Solve the equation $6\sin x^2 - \sin x - 1 = 0$ where $0^\circ \leq x < 360^\circ$ (10 marks)
8. An arithmetic sequence is given as follows:
42, 30, 18, 6, ...
- (a) Find the common difference of the arithmetic sequence. (2 marks)
 - (b) Find the 6th term and the sum of the first 6 terms. (8 marks)
9. A bag contains 2 white balls, 3 green balls and 4 red balls.
- (a) A ball is drawn at random from the bag. Find the probability that the ball is red. (4 marks)
 - (b) Two balls are drawn at random from the bag without replacement. Find the probability that both balls are red. (6 marks)

Section C Long Questions (40 marks)

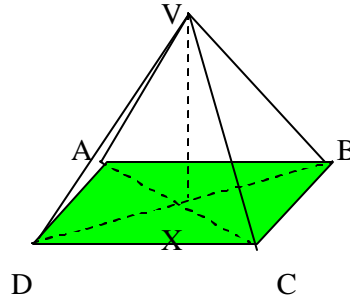
Answer All questions in this section. Each question carries 20 marks.

10. (a) Calculate the interest earned on a sum of \$12,000 compounded quarterly at 4% p.a. for 2 years. (8 marks)
- (b) ABC bank offers a saving product as follows: \$1,000 has to be deposited on the first day of each month for a consecutive 12 months. The interest is calculated at 0.4% per month compounded monthly. Find the amount accrued by a customer joining this saving scheme at the end of 1 year. (12 marks)

11. (a)

A right pyramid standing on a square base has a height $5\sqrt{2}$ m. The length of one side of the base is 10m.

- (a) Find the length of a slant edge. (8 marks)
- (b) Find the total area of the slant surfaces. (8 marks)
- (c) Find the volume of the right pyramid. (4 marks)



END OF ASSIGNMENT II