Maths Revision Test 3

Time: 60 mins

Max Marks : 37

Q1.

(a) Find the value of $(-1) + (-1)^{2n}+(-1)^{2n+1}+(-1)^{4n+2}$ where n is any positive odd integer.
2 mark

(b) Find 13/64 is terminating or non-terminating decimal. Find all the correct decimal places when its decimal expansion expands.
2 mark

(c) Show that $(\sqrt{3} + \sqrt{5})^2$ is a irrational number.

2 marks

Q2. Show that any positive odd integer is of the form 4m+1 or 4m+3, where m is some integer.

3 marks

Q3. Determine

A) Divide the polynomial $x^4 – 9x^2 + 9$ by the polynomial $x^2 -3x$ and verify the division algorithm.

B) Obtain all the zeroes of the polynomial $x^4-3\sqrt{2}x^3-3x^2+3\sqrt{2}x-4$, if two of its zeroes are $\sqrt{2}$ and $2\sqrt{2}$.

C) Solve using cross multiplication method.

$x + y = 1$

$2x – 3y = 11$

9 marks

Q4 If $\sin\theta = c$ and $\sec\theta = b$ then find the value of $\cot\theta$. 1 mark

Q5 If $\sin\theta = \cos\theta$, find the value of $2\tan^2\theta + \sin^2\theta + 1$.

3 marks

Q5 Two students on either side of 75m high building and in line with base of building observe the angles of elevation of the top of the building as 30º and 60°. Find the distance between the two students.

4 marks

Q6. For helping poor boys of their class , students have collected money as shown. Find mean and median of this data.

Money saved (in ₹)	5–7	7–9	9–11	11–13	13–15
No. of students	6	3	9	5	7

3 marks

Q7. Find the missing frequencies (f1,f2 and f3) in the following frequency distribution when It is given that f2 : f3 = 4: 3 and mean is 50.

Class Interval	0–20	20–40	40–60	60–80	80–100	Total
Frequency	17	f_1	f_2	f_3	19	120

4 marks

Q8. If secØ = x + 1/4x, prove that secØ + tanØ = 2x or 1/2x

4 marks