ATOMIC ENERGY EDUCATION SOCIETY

[2017-2018]

CLASS: X SUBJECT: MATHEMATICS Max. Marks: 40

DATE: 12 /09/ 2017 PERIODIC TEST-II TIME: 1 1/2 HRS.

General Instructions:-

- *This question paper has four sections: Section A, Section B, Section C and Section D*
- *Section A has 3 questions and each question carries 1 mark.*
- *Section B has 3 questions and each question carries 2 marks.*
- *Section C has 5 questions and each question carries 3 marks.*
- *Section D has 4 questions and each question carries 4 marks.*
- *All questions are compulsory.*
- *Graph sheet may be taken if required.*
- *Use of calculators/log tables is not allowed.*

……

SECTION A [1x3=3]

1. State the fundamental theorem of Arithmetic.

2. Check whether x = - 4 is a solution of the equation $x^4 + 5x^3 + 6x - 7 = 0$

3. Which term of the A.P 3,8,13,18, ---- is 78 ?

SECTION B [2x3=6]

4. If $P(x) = x^2 + 5x + 2$, find the value of P (3) + P(2) + P (0)

5. Solve the pair of linear equations:

    0.2 x + 0.3 y = 1.3

    0.4x + 0.5y = 2.3

6. Find the roots of the quadratic equation $2x^2 - 2\sqrt{2}x + 1 = 0$, using the formula.

SECTION C   [3x5=15]

7.   Use Euclid's algorithm to find the H.C.F of 4052 and 12576.

8.   Divide $3x^2 - x^3 - 3x + 5$ by $x - 1 - x^2$ and verify the division algorithm.

9.   How many two- digit numbers are divisible by 3?

10.   Prove that, if a line divides any two sides of a triangle in the same ratio, the line is parallel to the third side.

11. The base of an isosceles triangle is 2/3 times its congruent sides. Perimeter of the triangle is 32 cm. Find the length of each side of that triangle.

SECTION D   [4x4=16]

12. Check graphically, whether the pair of equations
$$x + 3y = 6$$
$$2x - 3y = 12$$
     is consistent. If so, solve them graphically.

13.   A motor boat whose speed is 18 km/h in still water takes 1 hour more to go 24 km upstream than to return downstream to the same spot. Find the speed of the stream.

14.   Find the 20th term of the A. P whose 7th term is 24 less than the 11th term, first term being 12.

15.   A girl of height 90 cm is walking away from the base of a lamp post at a speed of 1.2m/s. If the lamp is 3.6 m above the ground, find the length of her shadow after 4 seconds.

XXXXXXXXXX…………..XXXXXXXXXX