Corrected in P.C
Checked by SA

ANJUMAN – I – ISLAM'S ALLANA ENGLISH HIGH SCHOOL

92, DR. D. N. ROAD. C.S.T. MUMBAI – 01

1ST SEMESTER EXAMINATION 2021 – 2022

SUBJECT: MATHS – I STD: IX MARKS: 40 DATE:

Q.1A) Choose the correct alternative for each of the following sub questions: (04)

1) Which of the following numbers is represented by every point on the number line?
   (a) Natural numbers (b) Irrational numbers
   (c) Rational numbers (d) Real numbers

2) What is the degree of the O polynomial?
   (a) 0 (b) 1 (c) Undefined (d) any real number

3) What is the percentage form of $\frac{16}{5}$?
   (a) 32% (b) 3.2% (c) 320% (d) 3200%

4) What is the index form of the polynomial (1,0, -3, 0, 5) taking X as variable?
   (a) $x^4 - 3x^3 + 5$ (b) $x^4 - 3x^2 + 5$ (c) $x^4 - 3x + 5$ (d) $x^5 - 3x^2 + 5$

5) which one of the following is an irrational numbers?
   (a) $\frac{\sqrt{16}}{25}$ (b) $\sqrt{5}$ (c) $\frac{3}{9}$ (d) $\sqrt{196}$

Q.1B) Solve the following sub questions: (any 4) (04)

i) Give the conjugate of $2\sqrt{5} + \sqrt{3}$?
ii) Write the following polynomial in standard form $P + 2P^3 + 10P^2 + 5P^4 - 8$.
iii) Add the following polynomials:
   (a) $3\ P^3q + 2\ p^2\ q + 7,\ \ 2\ p^2\ q + 4\ pq - 2\ p^3\ q$
iv) Write the following ratio in the reduced from
   (a) The ratio of the numbers denoting the perimeter and the area of a square, having side 4cm.
v) Write the ratio of first quantity to second quantity in reduced from.
   (i) 1.5 kg , 2500gm

Q.2A) Complete any two of the following activities: (04)

1. Simplify. $8\sqrt{5} + \sqrt{20} - \sqrt{125} = 8\sqrt{5} + \sqrt{4 \times 5} - \square$

$= 8\sqrt{5} + \square - \square$

$= (8 + 2 - 5)$

$= \square$

2. $\frac{9}{11}$ $11\overline{)9.000}$

90
- 88
□

-11
90
- □
20
-11
9

$\frac{9}{11}$ = □

---

3. $\frac{9}{14} = \frac{4.5}{\square} = \frac{9 \times ½}{14 \times ½} =$ ——

$\frac{9}{14} = \frac{\square}{42} = \frac{9 \times 3}{14 \times 3} =$ ——

Q.2B) Solve any four of the following sub questions: (08)

1) Compare the following pairs of ratios: (a) $\frac{3\sqrt{5}}{5\sqrt{7}}$, $\frac{\sqrt{63}}{\sqrt{125}}$

2) Add the given polynomials.
(a) $-7\ m^4 + 5m^3 + \sqrt{2}$, $5m^4 - 3m^3 + 2m^2 + 3m - 6$

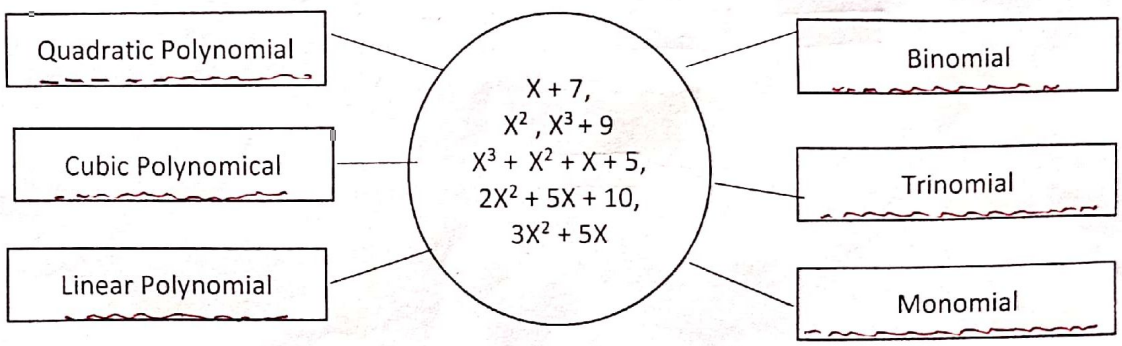
3) Multiply: $(3\sqrt{2} - \sqrt{3})$, $(4\sqrt{3} - \sqrt{2})$

4) The ratio of the present ages of Abha and her mother is 2:5 at the time of Abha's birth her mother age was 27 years. Find the present ages of Abha and her mother.

5) Rationalize the denominator: $\frac{2}{3\sqrt{7}}$

Q.3A) Complete any one of the following activities. (03)

1)



2) If $\frac{15a^2 + 4b^2}{15a^2 + 4b^2} = \frac{47}{7}$ then find the values of the following ratios $\frac{a}{b}$

$$\frac{15a^2 + 4b^2}{15a^2 - 4b^2} = \frac{47}{7}$$

$$\frac{(15a^2 + 4b^2) + (15a^2 - 4b^2)}{(15a^2 + 4b^2) - (15a^2 - 4b^2)} = \frac{\square}{\square}$$

(By Componendo-dividendo)

$$\therefore \frac{15a^2 + 4b^2 + 15a^2 - 4b^2}{\square} = \frac{\square}{40}$$

$$\therefore \frac{30a^2}{8b^2} = \frac{54}{40}$$

$$\therefore \frac{a^2}{b^2} = \frac{54}{40} \times \frac{8}{30}$$ (Multiplying both the sides by $\frac{8}{30}$)

$$\therefore \frac{a^2}{b^2} = \square$$

$$\therefore \frac{a}{b} = \square$$ (Taking positive square root)

B) Solve any two of the following sub questions (06)

i) The ratio of the present ages of Rehana and her mother is 2:7. After 2 years the ratio of their ages will be 1:3 What is Rehana's present age?

ii) find the factors of the polynomial given below. $12x^2 + 61x + 77$

iii) Simplify: $7\sqrt{48} - \sqrt{27} - \sqrt{3}$

Q.4) Solve any two of the following sub question: (08)

1) Rationalize the denominator $\frac{4}{7 + 4\sqrt{3}}$

2) Multiply the following polynomials.
$(m^3 - 2m + 3)$ $(m^4 - 2m^2 + 3m + 2)$

3) If $\frac{a}{b} = \frac{7}{3}$ then find the values of the following ratios: $\frac{5a+3b}{5a-3b}$

Q.5) Solve any one of the following sub question: (03)

1) Write the coefficient of m^3 in each of the given polynomials.
(a) m^3 (b) $\frac{-3}{2} + m - \sqrt{3}m^3$ (c) $\frac{-2}{3} m^3 - 5m^2 + 7m - 1$

2) Simlify: $5\sqrt{3} + 2\sqrt{27} + \frac{1}{\sqrt{3}}$

****