SUBJECT : MATHEMATICS                                CLASS : VIII

TIME : 2 HOURS                                       MARKS : 80

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Please be neat and show the rough work on the answer page in a column on the right hand side of the page.

## SECTION – I (40 MARKS)
### (All questions are compulsory)

Q.I. a) Simplify :  $(3)^{-5} \times 3^2 \div 3^{-6} \times (2^2 \times 3^3)^2 + \left(\frac{2}{3}\right)^{-1} + 2^{-1} + \left(\frac{1}{19}\right)^{-1}$    [4]

b) What should be subtracted from the sum of $\frac{-8}{17}$ & $\frac{7}{11}$ to get $\frac{-3}{7}$    [3]

c) Solve : $\sqrt{0.9} \times \sqrt{1.6}$    [3]

d) Write the following sets using the rule method:-    [4]
   i) A = {7,14,21,28,35,42,49}
   ii) B = {S,M,I,L,E}
   iii) C = {Sunday, Monday, Tuesday, Wednesday}

e) Find the Quotient and remainder (if any) when $4x^3 - 16x^2 - 7$ is divided by $x - 4$ [3]

f) Add : 1) 6ax – 2by + 3cz,  - 11ax + 6by – cz, –2ax – 3by + 10cz.    [3]

   2) Subtract : $3x^2 - 5xy - 7y^2$ from $-11x^2 - 18xy + 8y^2$

g) Evaluate : (i)  $\left(\frac{5}{6}a^2 + 2\right)\left(\frac{5}{6}a^2 + 2\right)$    [4]

   (ii) $(x^2 y - yz^2)^2$

h) Factorise : (i) $3x^5 - 48x^3$    [3]

   (ii) $a^3 + ab(1 - 2a) - 2b^2$

i) Solve the equation:    [3]
   $18 - 15\left(3x + \frac{2}{3}\right) = \left(\frac{2x+1}{2}\right) - 7$

...2/-

j) The sum of three consecutive multiples of 8 is 888. Find the multiples. [4]

k) How many sides does a regular polygon have if each of its interior angle is 120° [3]

l) Solve simultaneously and find 'x' & 'y'. [3]

$$y = 4x + 3, \quad 3x + y = 17$$

## SECTION – II

## [ATTEMPT ANY 4 QUESTIONS]

Q.2.

a) Evaluate : $9^{3/2} - 3 \times 5^\circ - \left(\dfrac{1}{81}\right)^{1/2}$ [4]

b) Evaluate : $\dfrac{3}{7} + \left(\dfrac{-6}{11}\right) + \left(\dfrac{-8}{21}\right)$ [3]

c) Find $\sqrt[3]{4096}$ by prime factor method. [3]

Q.3. a) If A = {factors of 24} and B = {factors of 36}, then find [4]

　(i) A∪B　(ii) A∩B　(iii) A – B　(iv) B – A

b) Using identities evaluate : 1) 10.3 x 9.7 [3]

　　　　　　　　　　2) 95 x 105

c) Factorise : $4x^2 - y^2 + 6y - 9$ [3]

Q.4. a) Find the value of x and y of the following simultaneous equation. [4]

　　　　$49x + 51y = 649$

　　　　$51x + 49y = 651$

b) Find the square root of the following by division method only: [3]

　　　1314.0625

c) Simplify : $(x + 3)(x - 3)(x + 4)(x - 4))$ [3]

Q.5. a) Solve the following simultaneous equation graphically. [4]

$$x + 2y = 11$$
$$2x - y = 2$$

b) The ratio between an exterior angle and the interior angle of a regular [3] polygon is 1:8. Find the number of sides in a polygon.

c) i) Solve : $0.01 + \sqrt{0.0064}$ [3]

ii) Write the additive inverse of : $\dfrac{6}{-7}$

Q.6. a) (i) Factorise : $p(x - y)^2 + qx - qy + 3x - 3y$ [4]
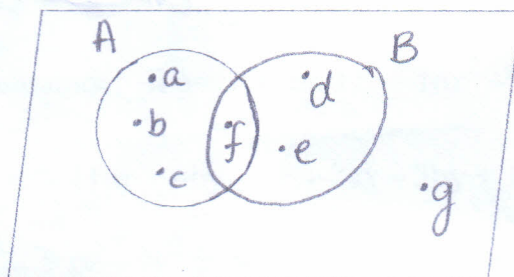
(ii) Expand : $(4x - 1)(4x + 2)$

b) Find the measure of each interior angle of a regular decagon. [3]

c) (i) Solve : $7x - 8 = 5x + 2$ [1]

(ii) Study the venn diagram drawn below and answer the questions that follow. [2]

Find : A – B

$A^l$

$B^l$



——— X ———