Name:                                                                                       Date:

**01**. Which of the following rational numbers have terminating decimal representation?

(a). 3/5                  (b). 2/13                  (c). 40/27                  (d). 23/7

**02**. How many rational numbers can be found between two distinct rational numbers?

(a)Two                  (b). Ten                  (c). Zero                  (d). Infinite

**03**. The value of $(2 + \sqrt{3})(2 + \sqrt{3})$ is

(a)1                  (b)-1                  (c). 2                  (d). none of these

**04**. $(27)^{-2/3}$ is equal to

(a). 9                  (b). 1/9                  (c). 3                  (d). none of these

**05**. Every natural number is

(a). not an integer          (b). always a whole number (c). an irrational number          (d). not a fraction

**06**. Select the correct statement from the following

(a). 7/9> 4/5                  (b). 2/6 < 3/9                  (c). -2/3 > -4/5                  (d). -5/7 < -3/4

**07**. 7. $\overline{2}$ is equal to

(a). 68/9                  (b). 64/9                  (c). 65/9                  (d). 63/9

**08**. 0.83458456……………is

(a). an irrational number (b). rational number                  (c). a natural number                  (d). a whole number.

**09**. A terminating decimal is

(a). a natural number   (b). a rational number                  (c). a whole number                  (d). an integer.

**10**. The p/q form of the number 0.8 is

(a). 8/10                  (b). 8/100                  (c). 1/8                  (d). 1

**11**. The value of $^3\sqrt{1000}$ is

(a). 1                  (b). 10                  (c). 3                  (d). 0

**12**. The sum of rational and an irrational number

(a). may be natural          (b). may be irrational                  (c). is always irrational                  (d). is always rational

**13**. The rational number not lying between 3/5 and 2/3 is

(a). 49/75                  (b). 50/75                  (c). 47/75                  (d). 46/75

**14**. 0.123 is equal to

(a). 122/990                  (b). 122/100                  (c). 122/99                  (d). None of these

**15**. The number $(1 + \sqrt{3})^2$ is

(a). natural number          (b). irrational number                  (c). rational number                  (d). integer

**16**. The simplest form of $\sqrt{600}$ is

(a). $10\sqrt{60}$                  (b). $100\sqrt{6}$                  (c). $20\sqrt{3}$                  (d). $10\sqrt{6}$

**17**. The value of 0. $\overline{23}$ + 0. $\overline{22}$ is

(a). 0.45                  (b). 0.44                  (c). 0.46                  (d). None of these

**18**. The value of $2^{1/3} \cdot 2^{4/3}$ is

    (a). 2         (b). 1/2         (c). 3         (d). None of these

**19**. $16\sqrt{13} / 9\sqrt{52}$ is equal to

    (a). 3/9         (b). 9/8         (c). 8/9         (d). None of these

**20**. $\sqrt{8}$ is an

    (a). natural number     (b). rational number     (c). integer     (d). irrational number

**Q01**. Simplify:

    (a). $(\sqrt[3]{2}) \times (\sqrt[4]{3})$         (b). $\sqrt[3]{125}$         (c). $\sqrt[4]{1250}$)

    (d). $(3\sqrt{2} + 2\sqrt{3})^2 (3\sqrt{2} - 2\sqrt{3})^2$     (e). $(\sqrt{5} + \sqrt{2})^2$     (f) $3^3\sqrt{250} + 7^3\sqrt{16} - 4^3\sqrt{54}$

    (g). $\dfrac{2+\sqrt{5}}{2-\sqrt{5}} + \dfrac{2-\sqrt{5}}{2+\sqrt{5}}$         (h). $3\sqrt{48} - \dfrac{5}{2}\sqrt{\dfrac{1}{3}} + \dfrac{4}{3}$

**Q02**. Find the three rational numbers between

    (a) $\dfrac{1}{2}$ and $\dfrac{1}{3}$     (b). $\dfrac{3}{7}$ and $\dfrac{4}{7}$

**Q03**. Find rationalizing factor of $\sqrt{300}$.

**Q04**. Find three irrational numbers between

    (a). 2 and 3         (b). $2.\overline{2}$ and $3.\overline{3}$

**Q05**. Rationalize the denominator $\dfrac{1}{\sqrt{5}+\sqrt{2}}$ and subtract it from $(\sqrt{5} + \sqrt{2})$

**Q06**. Multiply

    (a). $(3 - \sqrt{5})$ by $(6 + \sqrt{2})$         (b). $\sqrt{3}$ by $\sqrt[3]{5}$

**Q07**. Show that the numbers are irrational     (a)$\sqrt{7} - 3$     (b). $5\sqrt{2}$

**Q08**. Express in the form $\dfrac{p}{q}$.

    (a). 0.8888...     (b). $2.417\overline{8}$     (c). $2.\overline{4178}$

**Q09**. Simply by rationalizing denominator

    (a) $\dfrac{7+3\sqrt{5}}{7-3\sqrt{5}}$     (b). $\dfrac{1}{4+2\sqrt{3}}$

**Q10**. Give an example of two irrational numbers whose

    (a). sum is a rational number     (b). product is a rational number   (c). Quotient is a rational number.

**Q11**. Simplify

    (a). $\left(\left(625^{-\frac{1}{2}}\right)^{\frac{1}{4}}\right)^2$     (b). $\dfrac{11^{\frac{5}{2}}}{11^{\frac{3}{2}}}$     (c). $\dfrac{27^{-\frac{2}{3}}}{9^{\frac{1}{2}} \cdot 3^{-\frac{3}{2}}}$     (d). $\dfrac{9^{\frac{3}{2}} \cdot 9^{\frac{4}{2}}}{\frac{11}{2}}$

**Q13**. Visualize on the number line using successive magnification.

    (a). 3.76     (b). $\sqrt{3}$     (c). 2.4646     (d). $5.3\overline{7}$     (v) $\sqrt{4}$

**Q14**. Prove that $\dfrac{1}{1+x^{b-a}+x^{c-a}} + \dfrac{1}{1+x^{a-b}+x^{c-b}} + \dfrac{1}{1+x^{a-b}+x^{c-b}} = 1$

**Q15**. If $\sqrt{10} = 3.162$, $\sqrt{5} = 2.236$, $\sqrt{3} = 1.732$ and $\sqrt{2} = 1.414$. Find the value of

    (a). $\dfrac{2}{\sqrt{5}+\sqrt{3}} + \dfrac{7}{\sqrt{5}-\sqrt{3}}$         (b). $\dfrac{1}{\sqrt{2}+\sqrt{3}}$

(c). $\dfrac{3}{\sqrt{5}+\sqrt{2}} + \dfrac{7}{\sqrt{5}-\sqrt{2}}$

(d). $\dfrac{\sqrt{5}+\sqrt{2}}{\sqrt{5}}$

**Q16**. If $\dfrac{1}{7}$ = 0. $\overline{142875}$ . Find the value of $\dfrac{2}{7}, \dfrac{3}{7}, \dfrac{4}{7}$.

**Q17**. Find a and b if $\dfrac{3-\sqrt{6}}{3+2\sqrt{6}}$ = a$\sqrt{6}$ – b.

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**Q01**. Simplify:

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(g). $\frac{2 + \sqrt{5}}{2 - \sqrt{5}} + \frac{2 - \sqrt{5}}{2 + \sqrt{5}}$             (h). $3\sqrt{48} - \frac{5}{2}\sqrt{\frac{1}{3}} + \frac{4}{3}$

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