

T3- Real Number System And Scientific Notations Of Real Numbers And Logarithms

Model Question Paper VIII

9th Standard

Maths

Reg.No. :

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I. Answer all the questions

Time : 01:45:00 Hrs

Total Marks : 60

10 x 1 = 10

Part-A

- 1) The simplest form of $\sqrt{50}$ is
(a) $5\sqrt{10}$ (b) $5\sqrt{2}$ (c) $10\sqrt{5}$ (d) $25\sqrt{2}$
- 2) $\frac{2}{\sqrt{2}}$ is equal to
(a) $2\sqrt{2}$ (b) $\sqrt{2}$ (c) $\frac{\sqrt{2}}{2}$ (d) 2
- 3) The order and radicand of the surd $\sqrt[8]{12}$ are respectively
(a) 8,12 (b) 12,8 (c) 16,12 (d) 12,16
- 4) $5\sqrt[3]{3}$ represents the pure surd
(a) $\sqrt[3]{15}$ (b) $\sqrt[3]{375}$ (c) $\sqrt[3]{75}$ (d) $\sqrt[3]{45}$
- 5) Which one of the following is not true?
(a) When x is not a perfect square, $\sqrt{x}$ is an irrational number
(b) The index form of $\sqrt[n]{x^m}$ is $x^{\frac{n}{m}}$ (c) The radical form of $\left(x^{\frac{1}{n}}\right)^{\frac{1}{m}}$ is $\sqrt[m]{\sqrt[n]{x}}$
(d) Every real number is an irrational number
- 6) The scientific notation of 923.4 is
(a) 9.234×10^{-2} (b) 9.234×10^2 (c) 9.234×10^3 (d) 9.234×10^{-3}
- 7) The scientific notation of 0.00036 is
(a) 3.6×10^{-3} (b) 3.6×10^3 (c) 3.6×10^{-4} (d) 3.6×10^4
- 8) The decimal form of 3.506×10^{-2} is
(a) 0.03506 (b) 0.003506 (c) 35.06 (d) 350.6
- 9) The value of $\log_4 \left(\frac{4}{3}\right)$ is
(a) -2 (b) 1 (c) 2 (d) -1
- 10) $\log_{10} 8 + \log_{10} 5 - \log_{10} 4 =$
(a) $\log_{10} 9$ (b) $\log_{10} 36$ (c) 1 (d) -1

Part-B

- 11) Express the following mixed surds into pure surds: $\sqrt[16]{2}$
- 12) Multiply $\sqrt[3]{13} \times \sqrt[3]{5}$
- 13) Which is greater? $\sqrt[4]{5}$ or $\sqrt[3]{4}$
- 14) Simplify $\frac{1}{\sqrt{3} + \sqrt{5}}$ by rationalizing the denominator.
- 15) Simplify $\sqrt[3]{128} \div \sqrt[3]{64}$
- 16) Write the following numbers in scientific notation.
9345
- 17) Prove that $\log_3 2 \times \log_4 3 \times \log_5 4 \times \log_6 5 \times \log_7 6 \times \log_8 7 = \frac{1}{3}$
- 18) Evaluate
 $\log_{16} \left(\frac{1}{32}\right)$
- 19) Given that $\log 4586 = 3.6615$, find
 $\log 4.586$
- 20) Simplify
$$\frac{(84.5)^4 \times \sqrt[3]{0.0064}}{(72.5)^2 \times \sqrt{62.3}}$$

Part-C

- 21) Express the following surds in its simplest form. $\sqrt[3]{108}$
- 22) Which is greater? $\sqrt{2}$ or $\sqrt[3]{3}$
- 23) Identify which of the following are surds and which are not with reasons.
 $\sqrt{4} \times \sqrt[3]{16}$

10 x 2 = 20

10 x 3 = 30

24) Express the following surds in its simplest form. $\sqrt{98}$

25) Find the values of the following upto 3 decimal places. Given that $\sqrt{2} \approx 1.414$.

$$\sqrt{3} \approx 1.732, \sqrt{5} \approx 2.236, \sqrt{10} \approx 3.162, \frac{3-\sqrt{5}}{3+2\sqrt{5}}$$

26) Write the following numbers in decimal form.

$$3.25 \times 10^{-6}$$

27) Represent the following numbers in the scientific notation.

$$0.0096$$

28) State whether each of the following statements is true or false.

$$\log_2 \left(\frac{25}{3} \right) = \frac{\log_2 25}{\log_2 3}$$

29) Obtain the equivalent logarithmic form of the following.

$$25^{\frac{1}{2}} = 5$$

30) The mantissa of $\log 23750$ is 0.3756. Find the value of the following.

(i) $\log 23750$

(ii) $\log 23.75$

(iii) $\log 2.375$

(iv) $\log 0.2375$

(v) $\log 23750000$

(vi) $\log 0.00002375$

