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Questions:

Multiple Choice Question

1. Which of the following is a rational number?
   (a) $1+\sqrt{3}$ (b) π (c) $2\sqrt{3}$ (d) 0
2. Every rational number is:
   (a) a natural number (b) an integer (c) a real number (d) a whole number
3. A rational number lying between -3 and 3 is:
   (a) 0 (b) -4.3 (c) -3.4 (d) 1.101 1001 10001...
4. A rational number lying between $\sqrt{2}$ and $\sqrt{3}$ is:
   (a) $\frac{\sqrt{2}+\sqrt{3}}{2}$ (b) $\sqrt{6}$ (c) 1.6 (d) 1.9
5. The rational number between -1/5 and -2/5 is
   (a) 0 (b) -1/4 (c) -3/10 (d) -7/25
6. Two rational numbers between $\frac{2}{3}$ and $\frac{5}{3}$ are:
   (a) 1/6 and 2/6 (b) 1/2 and 2/7 (c) 5/6 and 7/6 (d) 2/3 and 4/3
7. If $\sqrt{x}$ is an irrational number, then x is:
   (a) rational (b) irrational (c) 0 (d) real
8. The decimal form of 56/1000 is
   (a) 0.56 (b) 0.056 (c) 0.0056 (d) 5.6
9. A terminating decimal is:
   (a) natural number (b) a whole number (c) a rational number (d) an integer
10. A number is an irrational if and only if its decimal representation is:
    (a) non-terminating (b) non-terminating and repeating (c) non terminating and non repeating (d) terminating
11. Which of the following is a rational number?
    (a) $\sqrt{5}$ (b) π (c) 0.101 001 0001 00001... (d) 0.853 853 853....
12. Which one of the following is an irrational number?
    (a) 0.14 (b) $0.\overline{1416}$ (c) $0.\overline{1416}$ (d) 0.401 4001 40001 4...
13. The process of visualisation of representation of numbers on the number line through a magnifying glass is called
    (a) successive magnification (b) approximation (c) imagination (d) none of these
14. $5.3\overline{7}$ lies most accurately
    (a) between 5.37 and 5.38 (b) between 5.3 and 5.4 (c) between 5.377 and 3.378 (d) between 5.3777 and 5.3778
15. Which of the following is an irrational number?
    (a) 0.15 (b) $0.15\overline{16}$ (c) $0.\overline{1516}$ (d) 0.501 5001 50001...
16. Which of the following numbers is an irrational number?
    (a) $\sqrt{23}$ (b) $\sqrt{225}$ (c) 0.3796 (d) $7.\overline{478}$
17. Which of the following is an irrational number?
    (a) $3.\overline{3}$ (b) 3.763 (c) $3.\overline{763}$ (d) 3.101 1001 10001...
18. The decimal expansion of $\sqrt{2}$ is
    (a) finite decimal (b) 1.4121 (c) non-terminating recurring (d) non-terminating non-recurring
19. π is:
    (a) a rational number (b) an integer (c) an irrational number (d) a whole number
20. An irrational number between $\frac{5}{7}$ and $\frac{7}{9}$
    (a) 0.75 (b) $\sqrt{6}$ (c) 0.750 7500 75000... (d) 0.7512
21. The value of $2.\overline{9}$ in the form $\frac{p}{q}$ where p and q are integers and $q \neq 0$, is
    (a) $\frac{2999}{1000}$ (b) $\frac{19}{10}$ (c) 3 (d) $\frac{26}{9}$
22. The sum of $0.\overline{3}$ and $0.\overline{2}$
    (a) $\frac{5}{99}$ (b) $\frac{5}{9}$ (c) $\frac{5}{10}$ (d) $\frac{5}{100}$
23. $\left(\sqrt{a}+\sqrt{b}\right)\left(\sqrt{a}-\sqrt{b}\right)$ is:
    (a) a+b (b) a-b (c) $2\sqrt{a}$ (d) $2\sqrt{b}$
24. $\left(a+\sqrt{b}\right)\left(a-\sqrt{b}\right)$ is equal to:
    (a) b^2-a^2 (b) a^2-b^2 (c) a^2-b (d) b^2-a
25. Which of the following numbers is an irrational number?
    (a) $\sqrt{16}-4$ (b) $\left(3-\sqrt{3}\right)\left(3+\sqrt{3}\right)$ (c) $\sqrt{5}+3$ (d) $-\sqrt{25}$
26. $\left(-2-\sqrt{3}\right)\left(-2+\sqrt{3}\right)$ when simplified is:
    (a) positive and irrational (b) positive and rational (c) negative and irrational (d) negative and rational
27. $\left(5+\sqrt{8}\right)+\left(3-\sqrt{2}\right)-\left(\sqrt{2}-6\right)$ when simplified is:
    (a) positive and irrational (b) negative and irrational (c) positive and rational (d) negative and rational
28. If $x=\frac{\sqrt{7}}{5}$ and $\frac{5}{x}=p\sqrt{7}$, then the value of p is:
    (a) $\frac{5}{\sqrt{7}}$ (b) $\frac{25}{7}$ (c) $\frac{7}{25}$ (d) $\frac{\sqrt{7}}{5}$

29. $\left(\sqrt{2}+1/\sqrt{2}\right)^2$ is equal to:
(a) $4\sqrt{2}$ (b) 9/2 (c) $4/\sqrt{12}$ (d) 9

30. $\sqrt{12}\times\sqrt{18}$ is equal to:
(a) $2\sqrt{6}$ (b) $3\sqrt{6}$ (c) $4\sqrt{6}$ (d) $6\sqrt{6}$

31. Value of $\frac{1}{\sqrt{18}-\sqrt{32}}$ is equal to:
(a) $\sqrt{2}$ (b) $-\sqrt{2}$ (c) $\frac{1}{\sqrt{2}}$ (d) $-\frac{1}{\sqrt{2}}$

32. If $\sqrt{3}=1.732$ and $\sqrt{2}=1.414$, the value of $\frac{1}{\sqrt{3}-\sqrt{2}}$ is:
(a) 0.318 (b) 3.146 (c) 1/3.146 (d) $\sqrt{1.732}-\sqrt{1.414}$

33. Rationalization of the denominator of $\frac{1}{\sqrt{5}+\sqrt{2}}$ gives:
(a) $\frac{1}{\sqrt{10}}$ (b) $\sqrt{5}+\sqrt{2}$ (c) $\sqrt{5}-\sqrt{2}$ (d) $\frac{(\sqrt{5}-\sqrt{2})}{3}$

34. If b>0 and b^2=a then $\sqrt{a}$ is equal to:
(a) -b (b) b (c) $\sqrt{b}$ (d) b^2

35. If a = 2 and b = 3, then the value of b^a is
(a) 4 (b) 9 (c) 2 (d) 3

36. The value of $\frac{2^0\times7^0}{5^0}$ is:
(a) 1 (b) 0 (c) 9/5 (d) 1/5

37. If $x^{a/b}=1$, then the value of a is
(a) 0 (b) 1 (c) -1 (d) None of these

38. When $15\sqrt{5}$ is divided by $3\sqrt{3}$, the quotient is:
(a) $5\sqrt{3}$ (b) $3\sqrt{5}$ (c) $5\sqrt{5}$ (d) $3\sqrt{3}$

39. The value of $(243)^{\frac{1}{5}}$ is equal to:
(a) 5 (b) 3 (c) 6 (d) 1

40. The value of $\sqrt[3]{216}-\sqrt[3]{125}$ is:
(a) 1 (b) 0 (c) 2 (d) -1

41. Simplified value of $(25)^{\frac{1}{2}}\times(5)^{\frac{1}{2}}$ is:
(a) 25 (b) 3 (c) 1 (d) 5

42. The value of $\sqrt{(3^{-2})}$
(a) 1/9 (b) 9 (c) -3 (d) 1/3

43. The value of $\sqrt[4]{(64)^{-2}}$ is
(a) 1/8 (b) 1/2 (c) 8 (d) 1/64

44. Simplified value of $(16)^{\frac{1}{4}}\times\sqrt[4]{16}$ is:
(a) 16 (b) 4 (c) 1 (d) 0

45. The simplified value of $(81)^{-1/4}\times\sqrt[4]{81}$ is:
(a) 9 (b) 3 (c) 1 (d) 0

46. $\sqrt[3]{\frac{54}{250}}$ equals:
(a) $\frac{9}{25}$ (b) $\frac{3}{5}$ (c) $\frac{27}{125}$ (d) $\frac{\sqrt[3]{9}}{5}$

47. $(0.001)^{1/3}$ is equal to
(a) 0.1 (b) 0.001 (c) 0.01 (d) 0.0001

48. The simplified form of $\frac{13^{\frac{1}{3}}}{13^{\frac{1}{6}}}$ is
(a) $13^{\frac{2}{15}}$ (b) $13^{\frac{5}{15}}$ (c) $13^{\frac{1}{3}}$ (d) $13^{\frac{4}{15}}$

49. The value of $\sqrt[4]{\sqrt[3]{2^2}}$ is equal to:
(a) $2^{-\frac{1}{6}}$ (b) 2^{-6} (c) $2^{\frac{1}{6}}$ (d) 2^6

50. If $x^{\frac{1}{12}}=49^{\frac{1}{24}}$, then x is equal to:
(a) 49 (b) 2 (c) 12 (d) 7

51. If $8^x=\frac{64}{2^x}$, then the value of x is
(a) 3 (b) 1 (c) 1/2 (d) 3/2

52. Value of $\left[\left(81^{-1/2}\right)^{\frac{-1}{4}}\right]^2$ is:
(a) 3 (b) 1/3 (c) 9 (d) 1/9

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