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## Solve the questions (in a separate notebook)

1. $(-2-\sqrt{3})(-2+\sqrt{3})$ when simplified is: (a)
positive and irrational
(b) positive and rational
(c) negative and irrational
(d) negative and rational
2. Two rational numbers between $\frac{1}{2}$ and $\frac{5}{3}$ are:
(a) $1 / 6$ and $2 / 6$
(b) $1 / 2$ and $2 / 1$
(c) $5 / 6$ and $7 / 6$
(d) $2 / 3$ and $4 / 3$
3. The sum of the digits of a number is subtracted from the number, the resulting number is always divisible by:
(a) 2
(b) 5
(c) 8
(d) 9
4. $(6+\sqrt{27})-(3+\sqrt{3})+(1-2 \sqrt{3})$ when simplified is:
(a) positive and irrational
(b) negative and rational
(c) positive and rational
(d) negative and irrational
5. Two rational numbers between $1 / 5$ and $4 / 5$ are:
(a) 1 and 3/5
(b) $2 / 5$ and $3 / 5$
(c) $1 / 2$ and $2 / 1$
(d) $3 / 5$ and $6 / 5$
6. Add $5 \sqrt{2}+3 \sqrt{3}$ and $2-5 \sqrt{3}$.
(a) $7 \sqrt{2}-2 \sqrt{3}$
(b) $6 \sqrt{2}-3 \sqrt{3}$
(c) $6 \sqrt{2}-8 \sqrt{3}$
(d) $6 \sqrt{2}+8 \sqrt{3}$
7. 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
8. The value of $\sqrt[4]{(64)^{-2}}$ is:
(a) $\frac{1}{8}$
(b) $\frac{1}{2}$
(c) 8
(d) $\frac{1}{64}$
9. $(5+\sqrt{ } 5)(5-\sqrt{5})$ on simplification gives:
(a) $2^{-1 / 6}$
(b) $2^{-6}$
(c) $2^{1 / 6}$
(d) $2^{6}$
10. When $15 \sqrt{15}$ is divided by $3 \sqrt{3}$ the quotient is:
(a) $5 \sqrt{3}$
(b) $5 \sqrt{5}$
(c) $5 \sqrt{5}$
(d) $3 \sqrt{3}$
11. Which of the following number is irrational?
(a) $\sqrt{ } 16$
(b) $(3-\sqrt{3})(3+\sqrt{ } 3)$
(c) $\sqrt{5}+3$
(d) $-\sqrt{ } 25$
12. The value of $\frac{2^{o}+7^{o}}{5^{\circ}}$ is:
(a) 2
(b) 0
(c) $\frac{9}{5}$
(d) $\frac{1}{5}$
13. $(5+\sqrt{8})+(3-\sqrt{2})-(\sqrt{2}-6)$ when simplified is:
(a) positive and irrational
(b) negative and irrational
(c) positive and rational
(d) negative and rational
14. An irrational number between $5 / 7$ and $7 / 9$ is:
(a) 0.75
(b) $\sqrt{6}$
15. Simplified value of $(25)^{1 / 3} \times(5)^{1 / 3}$ is:
(a) 25
(b) 3
(c) 1
(d) 5
16. Which of the following is an irrational number?
(a) 2.2
(b) $\pi$
(c) 3.763
(d) 3.763
17. Which of the following is an irrational number?
(a) $\sqrt{23}$
(b) $\sqrt{225}$
(c) 0.3796
(d) 7.478
18. Which of the following is the value of $(\sqrt{11}-\sqrt{7})(\sqrt{11}+\sqrt{7})$
(a) -4
(b) 4
(c) $\sqrt{11}$
(d) $\sqrt{7}$
19. Which of the following is a rational number?
(a) $1+\sqrt{3}$
(b) $\pi$
(c) $2 \sqrt{3}$
(d) 0
20. Simplified value of $(16)^{\frac{-1}{4}} \times \sqrt[4]{16}$ is:
(a) 16
(b) 4
(c) 1
(d) 0
21. Value of $\sqrt{\left(3^{-2}\right)}$ is:
(a) $\frac{1}{9}$
(b) 9
(c) -3
(d) $\frac{1}{3}$
22. Zero of the polynomial $p(x)$ where $p(x)=a x, a \neq 0$ is:
(a) 1
(b) a
(c) 0
(d) $\frac{1}{a}$
23. 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) $\frac{1}{3.146}$
(d) $\sqrt{1.732}-\sqrt{1.414}$
24. Which one of the following is an irrational number?
(a) 0.14
(b) 0.1416
(c) 0.1416
(d) $0.4014001400014 \ldots$.
25. $\pi$ is:
(a) a rational number
(b) an integer
(c) an irrational number
(d) a whole number
26. The decimal form of $\frac{56}{100}$ is:
(a) 0.56
(b) 0.056
(c) 0.0056
(d) 5.6
27. The decimal expansion of $\sqrt{2}$ is:
(a) finite decimal
(b) 1.4121
(c) non- terminating recurring
(d) non-terminating non- recurring
28. Simplify: $\frac{13^{1 / 5}}{13^{1 / 3}}$
(a) $13^{2 / 15}$
(b) $13^{8 / 15}$
(c) $13^{1 / 3}$
(d) $13^{-2 / 15}$
29. $\frac{p}{q}$ form of the number 0.3 is:
(a) $\frac{3}{10}$
(b) $\frac{3}{100}$
(c) $\frac{1}{3}$
(d) $\frac{1}{2}$
30. The simplest rationalization factor of $\sqrt{50}$ is:
(a) $5 \sqrt{2}$
(b) $\sqrt{2}$
(c) 50
(d) $\sqrt{50}$
31. The value of $(125)^{-1 / 3} \mathrm{~s}$
(a) 25
(b) $\frac{1}{5}$
(c) 5
(d) $\frac{1}{25}$
32. The product of Quotient of a non-zero rational number with an irrational number is:
(a) Irrational number
(b) Rational number
(c) Whole number
(d) Natural number
33. The value of $\sqrt{20} \times \sqrt{5}$ is
(a) 10
(b) $2 \sqrt{5}$
(c) $20 \sqrt{5}$
(d) $4 \sqrt{5}$
34. Which of the following is irrational number?
(a) 0.15
(b) 0.1516
(c) 0.1516
(d) 0.501500150001---
35. If $x=2+\sqrt{3}$, then $\left(x+\frac{1}{x}\right)$ equals to:
(a) $-2 \sqrt{3}$
(b) 2
(c) 4
(d) $4-2 \sqrt{3}$
36. 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
37. The value of $\sqrt[3]{216}-\sqrt[3]{125}$ is:
(a) 1
(b) 0
(c) 2
(d) -1
38. Which of the following is a rational number?
(a) $\sqrt{5}$
(b) $\pi$
(c) $0.101001000100001 \ldots$.
(d) $0.853853853 \ldots \ldots$
39. A rational number between -3 and 3 is
(a) 0
(b) -4.3
(c) -3.4
(d) $1.101100110001 \ldots$
40. Which of the following is an irrational number?
(a) 3.3
(b) 3.763
(c) 3.763
(d) $3.101100110001 \ldots$.
41. The factors of $(2 a-b)^{3}+(b-2 c)^{3}+8(c-$
$a)^{3}$ is: $(a)(2 a-b)(b-2 c)(c-a)$
(b) $3(2 a-b)(b-2 c)(c$
-a) (c) $6(2 a-b)(b-$
$2 c)(c-a)(d) 2 a \times b \times$
2c
42. In which of the following $(x+2)$ is a factor?
(a) $4^{3}-13 x+6$
(b) $x^{3}+x 2+x+4$
(c) $4^{3}+13 x-25$
(d) $-2 x^{3}+x 2-x-19$
43. Which of the following is a binomial in
$y$ ? (a) $2 y+3 y$
(b)
$2 y+1$
(c) $\sqrt{y}+\sqrt{2 y}$
(d) $y \sqrt{y}+1$
44. Which of the following polynomials has -3 as a zero?
(a) $(x-3)$
(b) $x^{2}-9$
(c) $x^{2}-3 x$
(d) $x^{2}+3$
45. Which of the following is a polynomial in $x$ ?
(a) $x+\frac{1}{x}$
(b) $x^{2}+\sqrt{x}$
(c) $x+\sqrt{2} x^{2}+1$
(d) $\sqrt{3 x}+1$
46. The remainder when $x^{2}+2 x+1$ is divided by $(x+1)$ is
(a) 4
(b) 0
(c) 1
(d) -2
47. Which of the following is a trinomial in $x$ ?
(a) $x^{3}+1$
(b) $x^{3}+x 2+x$
(c) $\mathrm{x} \sqrt{x}+\sqrt{x}+1$
(d) $x^{3}+2 x$
48. The value of the polynomial $x 2-x-1$ at $x=-1$ is:
(a) -3
(b) 1
(c) -1
(d) 0
49. If $P(x)=7-3 x+2 x^{2}$ then value of $P(-2)$ is :
(a) 12
(b) 31
(c) 21
(d) 22
50. The coefficient of $x^{2}$ in $\left(3 x+x^{3}\right)\left(x+\frac{1}{x}\right)$ is:
(a) 3
(b) 1
(c) 4
(d) 2
51. What is remainder when $x^{3}-2 x^{2}+x+1$ is divided by $(x-1)$ ?
(a) 0
(b) -1
(c) 1
(d) 2
52. Degree of which of the following polynomial is zero?
(a) $x$
(b) 15
(c) y
(d) $x+\frac{1}{x}$
53. When $p(x)$ is divided by $a x-b$ then the remainder is: $(a) p$
$(a+b)$
(b) $p(-b / a)$
(c) $\mathrm{p}(\mathrm{a} / \mathrm{b})$
(d) $p(b / a)$
54. If $x^{2}+k x+6=(x+2)(x+3)$ for all $x$, the value of $k$ is: (a) 1
(b) -1
(c) 5
(d) 3
55. Zero of the zero polynomial is:
(a) 0
(b) 1
(c) any real number
(d) not defined
56. Which of the following is cubic polynomial (a) $x^{3}+$
$3 x^{2}-4 x+3$
(b) $x^{2}+4 x-7$ (c) $3 x^{2}+4$
(d) $3\left(x^{2}+x+1\right)$
57. If $x^{51}+51$ is divided by $(x+1)$ the remainder is: (a) 0
(b) 1
$\begin{array}{ll}\text { (c) } 49 & \text { (d) } 50\end{array}$
