Quant Mega Quiz for SSC Tier - 1

Q1. If m and n are positive integers and (m – n) is an even number, then (m^2-n^2) will always be divisible by:
(a) 4
(b) 6
(c) 8
(d) 12

Q2. Two number are such that their difference, their sum and their product are in the ratio of 1:7:24. The product of the numbers is:
(a) 24
(b) 36
(c) 48
(d) 60

Q3. The digits indicated by * in 3422213** so that this number is divisible by 99 are:
(a) 1, 9
(b) 3, 7
(c) 4, 6
(d) 5, 5

Q4.
Find out the last digit $3^{41} \times 4^{19} \times 5^{17}$?
(a) 5
(b) 0
(c) 1
(d) 2

Q5. Find out the number of different factor of 86400?
(a) 96
(b) 128
(c) 72
(d)112

Q6. If a^3 b=abc=180, then find the value of C?
(a) 1
(b) 180
(c) 18
(d) 10

Q7. 4767 exactly divides ***341, The missing digits are
(a) 468
(b) 363
(c) 386
(d) 586

Q8. A number divided by 68 gives the quotient 269 and remainder zero. If the same number is divided by 67, then the remainder is:
(a) 0
(b) 1
(c) 2
(d) 3

Q9. The sum of the digits of a two-digit number is 81 less than the number. What is the difference between the digits of the number?
(a) 6
(b) 3
(c) 1
(d) Cannot be determined

Q10. If the digits of a two-digit number are interchanged, the number so obtained is greater than the original number by 27. If the sum of two digits of the number is 11, what is the original number?
(a) 47
(b) 38
(c) 35
(d) 49

Q11. A train can cross a tunnel in 24 seconds. Another train can cross the same tunnel in 40 seconds. If length of tunnel is 240 m and ratio of their speed is (faster to slower) 4 : 3, then after how much time both trains will cross each other in opposite direction. Given that, length of faster train is 75% of that of slower train.
(a) 12 sec
(b) 24 sec
(c) 26 sec
(d) 32 sec

Q12. N solid metallic spherical balls of radius 'R' are melted and recast into a cylindrical rod whose radius is 'r' and height is 'h'. relation among these parameters are given by $12\pi h^{-1} = \pi R^{-3} r^{2}$. Find value of 'N'.
(a) 3
(b) 18
(c) 9
(d) 27

Q13. The chord of the contact of tangents drawn from a point on the circle $x^2 + y^2 = a^2$ to the circle $x^2 + y^2 = b^2$ touches the circle $x^2 + y^2 = c^2$ such that $b^m = a^n c^p$ where m, n, p ε N and m, n, p are prime number to each other, then the value of $m^2 + n^2 + p^2 - 4$ is

(a) 2
(b) –2
(c) 1
(d) 3

Q14. The value of Cosec (57° + θ) + sin15° sin46° cosec30° sec75° sec44° – sec (33° – θ) is –

(a) 1
(b) 0
(c) ½
(d) 2

Q15.

If $x^{3.5} + x^{-3.5} + 2 = 5$ then find $(x^{10.5} + 5001) + (x^{-10.5} - 4999)$

(a) 18
(b) 2
(c) 20
(d) 0

Q16. A six digit number 789abc is divisible by 7, 11 and 13. Find the value of $(a + b + c)^2$ - 76?

(a) 529
(b) 576
(c) 500
(d) 476

Q17.

Find the value of 76 of $\left(\frac{1}{19}\right) \div 16 \times 8 + 5\left(4\frac{2}{5} \div 1\frac{1}{10} \times 2\right) - 4$ of $8 \div 4$

(a) 34
(b) 27
(c) 31
(d) 33

Q18. If the measure of exterior angle of a regular polygon is $\left(21\frac{3}{17}\right)°$, then the ratio of its diagonals to the number of its side is –

(a) 4: 5
(b) 17: 3
(c) 3: 17
(d) 7: 1

Q19. From the top of a tower, the angles of depression of two objects on the ground at point P and Q on the same side of it, are observed to be 60° and 30° respectively and the distance between the object is 300m. Find the distance between object at Q and top point of tower.

(a) 300

(b) $\frac{300}{\sqrt{3}}$

(c) $\frac{900}{\sqrt{3}}$

(d) $\frac{300\sqrt{3}}{3}$

Q20. Given that $(4x - 3)^3 + (5x - 9)^3 + (3x + 3)^3 = (15x - 27)(4x - 3)(3x + 3)$, find the value of x ; $x \neq ¾$

(a) 9

(b) 6

(c) 5

(d) 4

Q21.

If $x^{y^z} = 1, y^{z^x} = 125$ *and* $z^{y^x} = 243$,

then what is the value of $9x - 10y - 18z = ?$

(a) 18

(b) 15

(c) 12

(d) 5

Q22. The ratio of curved surface area of a right circular cylinder to the total area of its two bases is 2 : 1. If the total surface area of cylinder is 23100 cm^2, then what is the volume of the cylinder?

(a) 247200 cm^3

(b) 269500 cm^3

(c) 312500 cm^3

(d) 341800 cm^3

Q23. A solid cylinder has radius of base 14 cm and height 15 cm 4 identical cylinders are at from each base as shown is the figure. Height of small cylinder is 5 cm. What is the total surface area of the remaining part?

(a) 3740

(b) 3432

(c) 3124

(d) 2816

Q24. The radius of base of a solid cylinder is 7 cm and its height is 21 cm. It is melted and converted into small bullets, each bullet is of same size. Each bullet consists of two parts a cylinder and a hemisphere on one of its base. The total height of bullet is 3.5 cm and radius of base is 2.1 cm. Approximately how many complete bullets can be obtained?

(a) 83

(b) 89

(c) 74

(d) 79

Q25.

$P^3 + q^3 + r^3 - 3pqr = 4$, If $a = q + r, b = r + p$ and $c = p + q$, then what is the value of $a^3 + b^3 + c^3 - 3abc$?

(a) 4

(b) 8

(c) 2

(d) 12

Q26.

If $a^4 + 1 = \frac{a^2}{b^2}(4b^2 - b^4 - 1)$, then what is the value of $a^4 + b^4$?

(a) 2

(b) 16

(c) 32

(d) 64

Q27. If a + b + c = 9, ab + bc + ca = 26, $a^3 + b^3 = 91$, $b^3 + c^3 = 72$ and $a^3 + c^3 = 35$, then find the value of abc?

(a) 48

(b) 24

(c) 36

(d) 42

Q28.

If $x^3 - 4x^2 + 19 = 6(x - 1)$, then what is the value of $x^2 + \frac{1}{x-4}$?

(a) 3

(b) 5

(c) 6

(d) 8

Q29. x & y are positive integers. If $x^4 + y^4 + x^2y^2 = 481$ and $xy = 12$, then what is the value of $x^2 - xy + y^2$?

(a) 16
(b) 13
(c) 11
(d) 15

Q30.

$x^{y+z} = 1, y^{x+z} = 1024$ *and* $z^{x+y} = 729$, (x, y, z are natural numbers) then what is the value of $(z+1)^{y+x+1}$?

(a) 6561
(b) 10000
(c) 4096
(d) 14641