

FAST NU Basic Mathematics Test # 02

For FAST-NUCES Entry Test Preparation

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If you want to meet me directly regarding any doubts or entry test preparation etc.
Book one to one session with me on my website fakharstemsphere.com

Total MCQs: 60 + 1 Bonus	Topic: Basic Mathematics	Format: MCQs
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Instruction: Choose the correct option for each question. This question paper is designed for classroom and YouTube explanation practice.

Q1) Which one of the following lies between $\frac{3}{7}$ and $\frac{5}{9}$?

- a) $\frac{9}{17}$
- b) $\frac{2}{3}$
- c) $\frac{11}{16}$
- d) $\frac{3}{8}$

Q2) The areas of two square fields are 420.25 sq. m and 421 sq. m respectively. The ratio of their sides is:

- a) None of these
- b) 41 : 42
- c) 20 : 21
- d) 40 : 41
- e) 40 : 42

Q3) The sides of a rectangular field are in the ratio 2 : 1 and the area of the field is 2 hectares. What is the longer side?

- a) 200 m
- b) 100 m
- c) 250 m
- d) 400 m

Q4) How many spokes are there in a wheel of a sports car if any two adjacent spokes form an angle of 15° ?

- a) 12
- b) 26
- c) 24
- d) 15

Q5) The difference between compound interest and simple interest on Rs. 1250 for 2 years at 8% is:

- a) Rs. 4
- b) Rs. 8
- c) Rs. 6
- d) Rs. 2

Q6) The difference in simple interest on a certain sum of money for 3 years and 2 years at 15% per annum is Rs. 675. The sum of money is:

- a) Rs. 4300
- b) Rs. 3600
- c) Rs. 4500
- d) Rs. 4360

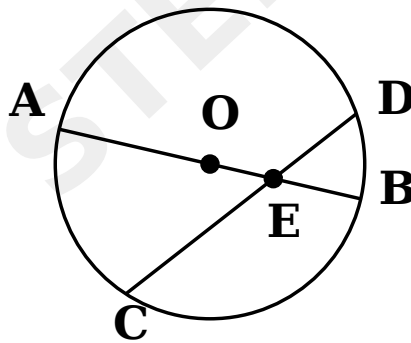
Q7) Aluminum bronze consists of copper and aluminum, usually in the ratio of 10 : 1 by weight. If an object made of this alloy weighs 77 lb, how many pounds of aluminum does it contain?

- a) 7.7
- b) 7.0
- c) 7.2
- d) 70.7

Q8) Diagonals of a quadrilateral are equal but not perpendicular to each other. It must be a:

- a) Parallelogram
- b) Rectangle
- c) Square
- d) Rhombus

Q9) AB is a diameter of the circle with centre O. CD cuts AB at E such that $OE = EB$. If $CE = 6$ cm and $ED = 2$ cm, then the radius of the circle is:



- a) $4\sqrt{3}$ cm
- b) 6 cm
- c) 8 cm
- d) 4 cm

Q10) $(\sqrt{98/7}) \times (3/\sqrt{12}) \times (\sqrt{72/6}) = ?$

- a) $\sqrt{2}$
- b) $\sqrt{8}$
- c) $\sqrt{3}$
- d) $1/\sqrt{8}$

Q11) A man plants 49284 apple trees in his garden and arranges them so that there are as many rows as there are apple trees in each row. The number of rows is:

- a) 182
- b) 122
- c) 202
- d) 222

Q12) The number 108 is 45 percent of what number?

- a) 265
- b) 236
- c) 235
- d) 48.6
- e) 240

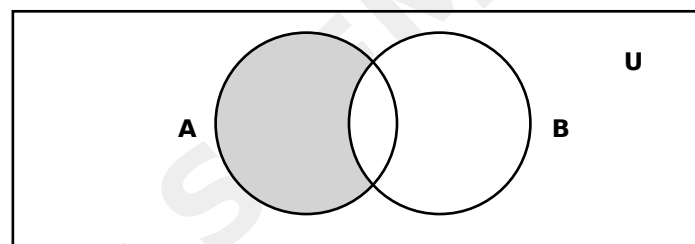
Q13) $B - A'$ is equal to:

- a) $A \cap B$
- b) $A - B$
- c) $B \cap A$
- d) $B \cup A$

Q14) In what proportion must a grocer mix rice at Rs. 1.20 per kg and Rs. 1.44 per kg, so as to make a mixture worth Rs. 1.26 per kg?

- a) 2 : 5
- b) 3 : 1
- c) 4 : 2
- d) 4 : 3
- e) 3 : 4

Q15) The shaded region in the adjoining diagram represents:



- a) A^c
- b) $A - B$
- c) B^c
- d) $B - A$

Q16) $11 \frac{1}{3} + 3 \frac{1}{2} + 2 \frac{4}{5} = ?$

- a) $12 \frac{1}{3}$
- b) $16 \frac{1}{2}$
- c) $17 \frac{1}{9}$
- d) $17 \frac{19}{30}$

Q17) If $x^2 + 1 = 0$, then the value of x is:

- a) 2
- b) 0
- c) ± 2
- d) None of these
- e) 1

Q18) A man spends Rs. 230.50 on average during the first eight months. During the next 4 months, he spends Rs. 180.00 on average. He took a loan of Rs. 164.00 during the year. Find his average monthly income for the year:

- a) 200
- b) 400
- c) 180
- d) 250

Q19) If A has m elements and B has n elements, then $A \times B$ has how many elements?

- a) $m \times n$
- b) $2n$
- c) $m - n$
- d) $m + n$

Q20) At what percentage per annum will the simple interest on a sum of money be $\frac{2}{5}$ of the amount in 10 years?

- a) 4%
- b) 1%
- c) 3%
- d) 2%

Q21) The difference in simple interest at 12% per annum on a certain sum for 2 years and 4 years is Rs. 864. The sum is:

- a) Rs. 3400
- b) Rs. 3600
- c) Rs. 2750
- d) Rs. 2500

Q22) If $5x - 3y = 3$ and $2x - 4y = -10$, then $3x + y = ?$

- a) 13
- b) 14
- c) 7
- d) -13

Q23) A's salary was reduced by 10%. In order to have his salary back to the original amount, it must be raised by:

- a) $12 \frac{1}{2}\%$
- b) 11%
- c) $11 \frac{1}{9}\%$
- d) 10%

Q24) Each angle of a regular pentagon will be:

- a) 72°
- b) 120°
- c) 90°
- d) 108°

Q25) By solving the inequality $18 - y > 9$, the answer will be:

- a) $y < 9$
- b) $y < 5$
- c) $y > 12$
- d) $y > 9$

Q26) If $a^2 + b^2 + c^2 = 8$ and $a + b + c = 3$, then $ab + bc + ca = ?$

- a) $1/2$
- b) $-2/4$
- c) $4/9$
- d) $3/5$
- e) $1/3$

Q27) The greatest number of four digits which is divisible by 15, 25, 40 and 75 is:

- a) 9800
- b) 9400
- c) 9000
- d) 9600

Q28) If $X \geq 0$ and $Y \leq 0$, then:

- a) $Y \leq X$
- b) $X \geq Y$
- c) None
- d) $X < Y$
- e) $X = Y$

Q29) A man travels 630 km partly by car and partly by bus. It takes 12 hours in all if he travels 180 km by bus and the rest by car. If he travels 120 km by bus and the remaining distance by car, it saves him 30 minutes. Find the speed of the car:

- a) 55 km/hour
- b) 45 km/hour
- c) 60 km/hour
- d) 50 km/hour

Q30) The present worth of Rs. 1716 due after 8 months at the rate of 6% per annum is:

- a) Rs. 1600
- b) Rs. 1650
- c) Rs. 1640
- d) Rs. 1664

Q31) If $1/r = 3$ and $s = 3$, what is r in terms of s ?

- a) s
- b) $-s$
- c) $1/s$
- d) $9s$

Q32) A rectangular tank of 25 cm by 20 cm contains 5 litres of water. What is the height of the water in the tank?

- a) 12 cm
- b) 10 cm
- c) 8 cm
- d) 15 cm

Q33) A is a set of even numbers and B is a set of prime numbers. $A \cap B$ is:

- a) Empty set
- b) $\{2\}$
- c) Set of whole numbers
- d) Set of odd numbers
- e) Universal set

Q34) By expanding $A = |\sqrt{3} 7; \sqrt{7} \sqrt{3}|$, we get:

- a) $-4\sqrt{7}$
- b) $(\sqrt{3})^3 - 7\sqrt{7}$
- c) $3 - 7\sqrt{7}$
- d) $6 - 7\sqrt{7}$
- e) $9 - 7\sqrt{7}$

Q35) If a bicycle is traveling at a speed of 10 km/hour, the time required to cover 400 m is:

- a) 8.9 minutes
- b) 1.3 minutes
- c) 7.6 minutes
- d) 2.4 minutes
- e) 3.2 minutes

Q36) One angle of a triangle is 82° . The other two angles are in the ratio 2 : 5. Find the number of degrees in the smallest angle of the triangle.

- a) 25
- b) 14
- c) 28
- d) 38

Q37) $3.01 \times 0.11 = ?$

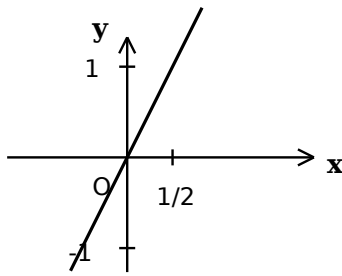
- a) 0.3311
- b) 0.0341
- c) 3.311
- d) 0.341

Q38) If a laser printer can print x pages per minute, how many minutes, in terms of x , would it take the laser printer to print a 100-page document?

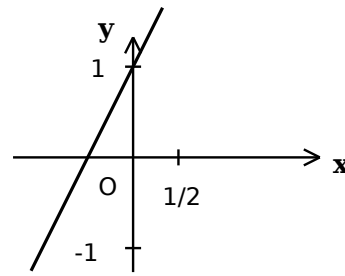
- a) $x/100$
- b) $100 + x$
- c) $100x$
- d) $100/x$
- e) $100 - x$

Q39) Which of the following is the graph of $y = 2x - 1$?

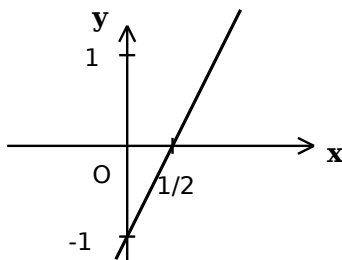
a)



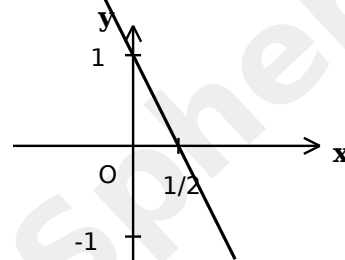
c)



b)



d)



Q40) If $\log_m(P + q)^2 = 1$, express P in terms of m and q .

- a) $P = \sqrt{q}$
- b) $P = -q \pm \sqrt{m}$
- c) $P = m \pm \sqrt{q}$
- d) None
- e) $P = m\sqrt{m}$

Q41) In an election there were two candidates. A candidate secured 57% of the total votes polled and was elected by a margin of 2100 votes. Find the total number of votes polled.

- a) 21000
- b) 18000
- c) 17500
- d) 15000

Q42) If the diameter of a circle increases by 50 percent, by what percent will the area of the circle increase?

- a) 50%
- b) 125%
- c) 100%
- d) 25%

Q43) In a circle of radius 17 cm, two parallel chords are drawn on opposite sides of a diameter. The distance between the chords is 23 cm. If the length of one chord is 16 cm, then the length of the other is:

- a) 23 cm
- b) 30 cm
- c) 34 cm
- d) 15 cm

Q44) A sum of money is divided among John, Joshua and Raymond in the ratio 3 : 7 : 11. If Raymond has Rs. 168 more than John, find the sum of money.

- a) Rs. 680
- b) Rs. 389
- c) Rs. 787
- d) Rs. 441

Q45) The total contribution by 3 students to the fund for a hospital was 60. After the 4th student contributed, the average of the 4 became 25. How much did the 4th student contribute?

- a) 60
- b) 40
- c) 50
- d) 80
- e) 70

Q46) $1111 \div 11 + 101 = ?$

- a) 202
- b) 204
- c) 220
- d) 200

Q47) What is the area of a right-angled triangle with hypotenuse of length 5 and base of length 3?

- a) 4
- b) 7
- c) 5
- d) 6
- e) 3

Q48) If $\log a = 0.4771$ and $\log b = 0.3010$, then $\log ab =$

- a) 0.5229
- b) 0.6532
- c) 0.6990
- d) 0.1761
- e) 0.7781

Q49) A dealer marks his goods 20% above his cost price. If he gives a discount of 10% on his marked price, the profit he earns on his goods is:

- a) 10
- b) 7
- c) 12
- d) 8

Q50) Four equal-sized maximum circular plates are cut off from a square paper sheet of area 784 cm^2 . The circumference of each plate is:

- a) 22 cm
- b) 44 cm
- c) 66 cm
- d) 88 cm

Q51) After a reduction of 8% in a water bill, \$300 remains to be paid. Then the original bill to be paid before reduction is:

- a) \$362
- b) \$355
- c) \$326
- d) \$350

Q52) In a group of 10 people who have salaries ranging from \$75,000 to \$200,000, the salary of the person earning the maximum is increased from \$200,000 to \$225,000. What is true about the current mean and median as compared to before the salary increase?

- a) The mean increases but the median stays the same.
- b) Cannot be determined
- c) The mean stays the same but the median increases.
- d) Both the mean and the median increase.
- e) The mean and median remain the same.

Q53) The product of two numbers is $-\frac{14}{27}$. If one of the numbers is $\frac{7}{9}$, then the other number is:

- a) $-\frac{3}{2}$
- b) $\frac{3}{2}$
- c) $\frac{2}{3}$
- d) $-\frac{2}{3}$

Q54) The mean proportion of 0.12 and 1200 is:

- a) 12
- b) 14.4
- c) 144
- d) 120

Q55) The ratio of the number of boys and girls in a school of 720 students is 7 : 5. How many more girls should be admitted to make the ratio 1 : 1?

- a) 220
- b) 120
- c) 90
- d) 240

Q56) Supposing that telegraph poles on a railroad are 50 meters apart, how many will be passed by a train in 2 hours if the speed of the train is 40 km/hour?

- a) 1400
- b) 1600
- c) 1200
- d) 800

Q57) A general wishing to draw up his 7250 men in the form of a solid square found that he had 25 men over. What is the number of men in the front?

- a) 100
- b) 150
- c) 80
- d) 85

Q58) What is the height of a cylinder with area of base 20 cm^2 and volume 400 cm^3 ?

- a) 10 cm
- b) 12 cm
- c) 13 cm
- d) 14 cm
- e) 20 cm

Q59) If $a - b = 6$, $ab = -2$, then $a^2 + b^2 = ?$

- a) 32
- b) 49
- c) 51
- d) 101
- e) 40

Q60) Aziz and Aslam entered into a partnership investing Rs. 12000 and Rs. 9000 respectively. After 3 months Zahid joined them with an investment of Rs. 15000. Find the share of Zahid in a half-yearly profit of Rs. 9500.

- a) Rs. 2500
- b) Rs. 3000
- c) Rs. 3500
- d) Rs. 4000

Bonus MCQ) If 11% of a number exceeds 7% of the same number by 18, the number is:

- a) 450
- b) 72
- c) 360
- d) 720