THE ASSOCIATION OF MATHEMATICS TEACHERS OF INDIA

Screening Test – Gauss Contest

NMTC at PRIMARY LEVEL – V & VI Standards

Saturday, 1st September, 2018

Note:

1. Fill in the response sheet with your Name, Class and the institution through which you appear in the specified places.
2. Diagrams are only visual aids; they are NOT drawn to scale.
3. You are free to do rough work on separate sheets.
4. Duration of the test: 2 pm to 4 pm – 2 hours.

PART – A

Note

- Only one of the choices A, B, C, D is correct for each question. Shade the alphabet of your choice in the response sheet. If you have any doubt in the method of answering, seek the guidance of the supervisor.
- For each correct response you get 1 mark. **For each incorrect response you lose $\frac{1}{2}$ mark.**

1. Observe the following sequence. What is the 100th term?

$$7, 8, 1, 0, 0, 1, 0, 1, 1, 0, 2, 1, 0, 3, \ldots$$

A. 1 B. 0 C. 2 D. 3

2. A number is multiplied by 2 then by $\frac{1}{3}$, then by 4, then by $\frac{1}{5}$ then by 6 and finally by $\frac{1}{7}$. The answer is 16. Then the number is

A. odd B. even C. a square D. a cube

3. Samrud bought a t-shirt for Rs 250. His friend Shlok wanted to buy it. Samrud wants to have a 10% profit on that. The selling price is (in rupees)

A. 280 B. 278 C. 276 D. 275

4. The value of $1 + 21 + 41 + 61 + 81 - 11 - 31 - 51 - 71 - 91$ is

A. -50 B. 50 C. 100 D. -100

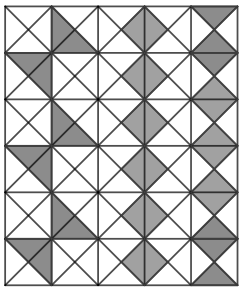
5. In the adjoining figure what portion of the figure is shaded?

A. $\frac{1}{2}$ B. $\frac{2}{3}$ C. $\frac{3}{4}$ D. $\frac{3}{10}$

6. The sum of the numbers in the three brackets ( ) is

$$\frac{(\,)}{24} = \frac{20}{(\,)} = \frac{24}{18} = \frac{4}{(\,)}$$

A. 60 B. 55 C. 50 D. 45



7. A is the smallest three digit number which leaves a remainder 2 when divided by 17. B is the smallest three digit number which leaves a remainder 7 when divided by 12. Then $A + B$ is
   A. 205 B. 312 C. 215 D. 207

8. A square of side 3 cm in cut into 9 equal squares. Another square of side 4 cm is cut into 16 equal squares. Saket made a bigger square using all the smaller square bits. The length of the side of the bigger square is (in cm)
   A. 7 B. 6 C. 5 D. 8

9. A contractor constructed a big hall, rectangular in shape, with length 32 meters and breadth 18 meters. He wanted to buy 1 meter by 1 meter tiles. But in the shop 3 meter by 2 meter tiles only were available. How many tiles he has to buy for tilting the floor?
   A. 48 B. 96 C. 120 D. 126

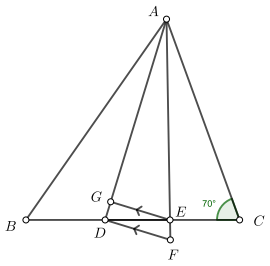
10. The fraction to be added to $2\frac{1}{3}$ to get the fraction $4\frac{4}{7}$ is
    A. $2\frac{1}{21}$ B. $2\frac{4}{21}$ C. $2\frac{5}{21}$ D. $2\frac{6}{21}$

PART – B

Note

- Write the correct answer in the space provided in the response sheet.
- For each correct response you get 1 mark. **For each incorrect response you lose $\frac{1}{4}$ mark.**

11. In the adjoining figure, $\angle BAD = \angle DAF = \angle FAC$. GE is parallel to DF, and $\angle EGA = 90°$. If $\angle ACE = 70°$, the measure of $\angle FDE$ is ———



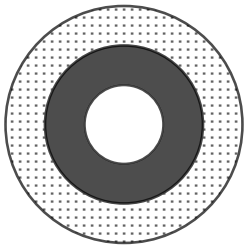
12. ABC is a triangle in which the angles are in the ratio $3 : 4 : 5$. PQR is a triangle in which the angles are in the ratio $5 : 6 : 7$. The difference between the least angle of ABC and the least angle of PQR is a°. Then $a =$ ———

13. Samrud had to multiply a number by 35. By mistake he multiplied by 53 and got a result 720 more. The new product is ———

14. Vishva plays football every 4th day. He played on a Tuesday. He plays football on a Tuesday again in ——— days.

15. In an elementary school 26% of the students are girls. If there are 240 less girls than boys, then the strength of the school is ———

16. There are three concentric circles as shown in the figure. The radii of them are 2 cm, 4 cm and 6 cm. The ratio of the area of the shaded region to the area of the dotted region is $\frac{a}{b}$ where a, b are integers and have no common factor other than 1. Then $a + b =$ ———



17. The value of

$$\left(1+\frac{1}{9}\right)\left(1+\frac{1}{8}\right)\left(1+\frac{1}{7}\right)\left(1+\frac{1}{6}\right)\left(1+\frac{1}{5}\right)\left(1+\frac{1}{4}\right)\left(1+\frac{1}{3}\right)\left(1+\frac{1}{2}\right)$$

is ———

18. When a two digit number divides 265, the remainder is 5. The number of such two digit numbers is ———

19. If $A\#B = \dfrac{A \times B}{A + B}$, the value of $\dfrac{12\#8}{8\#4} + \dfrac{10\#6}{6\#2}$ is ———

20. When water becomes ice, its volume increases by 10%. When ice melts into water its volume decreases by $a\,\%$. Then $a =$ ———