



# INTEGRATION-2K18

## NSV KARIMNAGAR ZONAL LEVEL MATHS OLYMPIAD TEST

### SCREENING TEST FOR QUIZ - SENIOR LEVEL (Class 8,9,10)

Time: 60 Minutes

Max. Marks: 60

- If  $\frac{1}{x+1} + \frac{1}{x+4} = 0$ , then  $x =$  ( )  
A)  $2\frac{1}{2}$                       B)  $-2\frac{1}{2}$                       C) 3                      D) -3
- The value of the polynomial  $x^8 - x^5 + x^2 - x + 1$  is ( )  
A) positive for all the real numbers                      B) negative for all the real numbers  
C) 0                      D) depends on value of  $x$
- The number of consecutive zeroes in  $2^3 \times 3^4 \times 5^4 \times 7$  ( )  
A) 2                      B) 4                      C) 5                      D) 3
- Which of the following is a Kaprekar's constant? ( )  
A) 6174                      B) 6147                      C) 6417                      D) 6714
- The sum of two numbers is 90 and the greater number exceeds thrice the smaller number by 14.  
The number is ( )  
A) 18, 72                      B) 19, 71                      C) 20, 70                      D) 15, 75
- A boat covers a certain distance downstream in 3 hours, and it covers the same distance upstream in 5 hours. If the speed of the boat in still water is 8 km/hr, then the speed of the stream is ( )  
A) 1 km/hr                      B) 1.5 km/hr                      C) 2 km/hr                      D) 3 km/hr
- Two numbers are in ratio 5:3. If they differ by 18, then the numbers are ( )  
A) 45, 27                      B) 25, 15                      C) 35, 21                      D) 65, 39
- The zeroes of the quadratic polynomial  $x^2 + 99x + 127$  are ( )  
A) both positive                      B) both negative                      C) both equal                      D) one positive and one negative
- If  $d$  is the HCF of 56 and 72. Find  $x, y$  satisfying  $d = 56x + 72y$  ( )  
A)  $x = 4, y = -3$                       B)  $x = 16, y = 8$                       C)  $x = 6, y = -4$                       D) None of these
- A bag contains 50P, 25P and 10P coins in the ratio 2:3:4 amounting to Rs. 129. Find the number of coins of each type ( )  
A) 120, 180, 240                      B) 180, 150, 200                      C) 200, 180, 120                      D) 180, 200, 140
- How many equal triangular faces does a regular pentagonal pyramid have? ( )  
A) 4                      B) 5                      C) 6                      D) 3
- Sum of the digits of a two digit number is 9. When we interchange the digits, it is found that the resulting two digit new number is greater than the original number by 27. ( )  
A) 63                      B) 36                      C) 45                      D) 54
- The denominator of a rational number is greater than numerator by 8. If the numerator is increased by 17 and the denominator is decreased by 1, the number obtained is  $\frac{3}{2}$ . Then the rational number is ( )  
A)  $\frac{13}{20}$                       B)  $\frac{30}{13}$                       C)  $\frac{21}{13}$                       D)  $\frac{13}{21}$

14. If  $\log_{10}2 = 0.3010$  then the number of digits in  $8^{25}$  ( )  
 A) 22                      B) 21                      C) 24                      D) None of these
15. Divide 34 in two parts in such a way that  $\left(\frac{4}{7}\right)^{th}$  of one part is equal to  $\left(\frac{2}{5}\right)^{th}$  of the other. ( )  
 A) 10                      B) 24                      C) 14                      D) 20
16. A solid has forty faces and sixty edges. Find the number of vertices of the solid. ( )  
 A) 20                      B) 22                      C) 24                      D) 26
17. Which of the given geometric solids has the maximum number of vertices? ( )  
 A) Cone                      B) Cylinder                      C) Cuboid                      D) Pyramid
18. Find the values of K for which the following equation has equal roots. ( )  
 $(K-12)x^2 + 2(K-2)x + 2 = 0$   
 A) 12, 14                      B) 16, 14                      C) 12, 16                      D) 10, 16
19. A bicycle's wheel makes 5000 revolution in moving 11km. Find the diameter of the wheel? ( )  
 A) 80 cm                      B) 70 cm                      C) 60 cm                      D) 50 cm
20. If  $y = \left(\sqrt[3]{3} + \frac{1}{\sqrt[3]{3}}\right)$  then the value of  $3y^2 - 9y = ?$  ( )  
 A) 9                      B) 16                      C) 14                      D) 10
21. In AC generator, minimum number of lines of force pass through the coil when the angle between the planes of coil and lines of force is \_\_\_\_\_ ( )  
 A)  $0^\circ$                       B)  $60^\circ$                       C)  $30^\circ$                       D)  $90^\circ$
22. \_\_\_\_\_ is used as a fuel in space ships ( )  
 A) Hydrogen                      B) Alcohol                      C) Petrol                      D) Diesel
23. The optical phenomenon which Newton's theory of light failed to explain is \_\_\_\_\_ ( )  
 A) Interference                      B) Polarization                      C) Diffraction                      D) All the above three
24. An exploding star may be called \_\_\_\_\_. ( )  
 A) Nova                      B) Super nova                      C) Protostar                      D) Neutron star
25. The distance travelled by a body is directly proportional to the time taken. Its speed \_\_\_\_\_ ( )  
 A) Increases                      B) Decreases                      C) Becomes zero                      D) Remains constant
26. Which of the following has the electronic configuration of Ar? ( )  
 A)  $Na^+$                       (B)  $Ca^{+2}$                       (C)  $O^{-2}$                       (D) Cl
27. Calculate the mass percentage of Oxygen in Calcium Carbonate. ( )  
 (A) 100%                      (B) 50%                      (C) 48%                      (D) 38%
28. Which of the following gas diffuses faster? ( )  
 A)  $CO_2$                       (B)  $Cl_2$                       (C)  $N_2$                       (D)  $NH_3$
29. Which of the following bonds is more polar when compared to others? ( )  
 A) O-H                      (B) N-H                      (C) C-H                      (D) H-H
30. The ratio of the difference between number of hydrogens present in propane and propyne, propane and propene is \_\_\_\_\_ ( )  
 A) 1:2                      (B) 2:1                      (C) 3:2                      (D) 2:3
31. Which type of hormone controls the menstrual cycle in human beings. ( )  
 A) LH                      (B) FSH                      (C) Progesterone                      (D) FSH, LH, Estrogen.

32. Seed formation without fertilization in flowering plants involves the process of. ( )  
 A) Poly embryos (B) Parthenocarpy (C) Dormancy (D) Apomixes
33. The depth of water in a bucket is 40 cm but its bottom appears to be raised to 10 cm.  
 What is refractive index of water? ( )  
 A) 2 (B) 2.5 cm (C) 1 cm (D) 1.33
34. The generic name of mango is. ( )  
 A) Mangifera indica (B) Indica (C) Mangifera (D) Indica mangifera
35. Lichen is. ( )  
 A) Saprophytic (B) Parasitic (C) Holozoic (D) Autotrophic
36. Darwin's finches discovered from the Galapagos island provide evidence in favour of \_\_\_\_ ( )  
 A) Camouflage (B) Mimicry  
 (C) Biogeographical evidence of evolution (D) Seasonal
37. A record player makes 60 rpm (revolution per minute). Find its angular velocity? ( )  
 A)  $2\pi$  radians<sup>-1</sup> (B)  $2\pi$  radians (C)  $1\pi$  radians<sup>-1</sup> (D)  $1\pi$  radians
38. An animal which comes out at night and hides during day time is. ( )  
 A) Diurnal (B) Nocturnal (C) Cursorial (D) Arboreal
39. Select the mismatch. ( )  
 A) Frankia - Alnus (B) Rhodospirillum - Mycorrhiza  
 (C) Anabaena - Nitrogen fixer (D) Rhizobium - Alfalfa
40. Parallel venation occurs in. ( )  
 A) Monocots (B) Dicots (C) All angiosperms (D) Ferns
- Choose the correct phrasal verb in the following questions.**
41. My mother has offered to look \_\_\_\_\_ the children, so we can go to the party ( )  
 A) for (B) into (C) after (D) at
42. The meeting has been put \_\_\_\_\_ to Friday as so many people have got the flu. ( )  
 A) up (B) in (C) back (D) out
43. Polo always comes \_\_\_\_\_ as very sincere. ( )  
 A) out (B) across (C) along (D) away
- Fill in the blanks with the correct option.**
44. I'm getting really unfit. I think I should \_\_\_\_\_ up a sport. ( )  
 A) speak (B) keep (C) hurry (D) take
45. They are so miserable. Perhaps you can \_\_\_\_\_ them up? ( )  
 A) cheer (B) grow (C) put (D) give
- Choose the correct Option that best explains the given word.**
46. Amateur. ( )  
 A) One who is not having experience.  
 B) One who does a thing for pleasure and not as a profession.  
 C) One who have all happiness.  
 D) One who remains sad.

47. Brood. ( )

- A) A collection of note books.
- B) A family of old animals.
- C) A family of young animals.
- D) A family of old and young animals.

**Select the sentence which is correctly punctuated.**

48. A) I can't see Tim's car, there must have been an accident. ( )
- B) I can't see Tim's car: there must have been an accident.
- C) I can't see Tim's car there must have been an accident.
- D) I can't see Tim's car; there must have been an accident.

**Choose the correct meaning of the given proverb/Idiom.**

49. To pick holes ( )
- A) To find some reason to quarrel.
  - B) To destroy something.
  - C) To criticize someone.
  - D) To cut some part of an item.

50. To end in smoke. ( )
- A) To ruin oneself (B) To excite great applause
  - C) To overcome someone (D) To make completely understand

51. "Adventures of Sherlock Holmes" is written by \_\_\_\_\_ ( )
- A) Lewis Fischer (B) Karl Marx (C) Arthur Conan Doyle (D) Edward Gibbon

52. "Mein kampf" is an autobiography of \_\_\_\_\_. ( )
- A) Abdul Fazal (B) Leo Tolstoy (C) Mahatma Gandhi (D) Adolf Hitler

53. Jonathan Swift is the author of \_\_\_\_\_. ( )
- A) The Guide (B) Canterbury Tales (C) Gulliver's Travels (D) Candles and Roses

54. "Paradise lost" was written by \_\_\_\_\_. ( )
- A) John Milton (B) Rudyard Kipling (C) John Bunyan (D) Hitler

55. Leo Tolstoy is the writer of \_\_\_\_\_. ( )
- A) Valley of Silence (B) War and Peace (C) Roses in December (D) Small is Beautiful

56. Who is the newly appointed Governor of the Reserve Bank of India (RBI)? ( )
- A) Arvind Panagariya (B) Rajiv Mehraish (C) Koushik Basu (D) Shaktikanta das

57. Who has been selected for the Best Woman Parliamentarian (Rajya Sabha) for 2018? ( )
- A) Nirmala Sitharaman (B) Smriti Irani (C) Roopa Ganguly (D) Kani Mozhi

58. The currency of Mauritius ( )
- A) Peso (B) Ruble (C) Pound (D) Rupee

59. Peso is the currency of ( )
- A) Russia (B) Syria (C) Zimbabwe (D) Mexico

60. On which date, the 2018 International Anti-Corruption Day was observed? ( )
- A) Dec. 10 (B) Dec. 9 (C) Dec. 11 (D) Dec. 12