

NATIONAL TALENT SEARCH EXAMINATION (NTSE-2017) STAGE -1 TELANGANA STATE : MAT

Date: 6/11/2016

Max. Marks: 50

SOLUTIONS

Time allowed: 45 mins

Question (1 to 5) :

In the number series given below, one number is missing each series is followed by five alternatives (1), (2), (3), (4) and (5). One of them is the right answer. Identify and indicate it as per the "instructions".

1. 5, 10, 17, 26,, 50

- (1) 34 (2) 31 (3) 37 (4) 41 (5) 43

Ans. (3)

Sol.
$$\begin{array}{ccccccc} 5 & 10 & 17 & 26 & 37 & 50 \\ & +5 & +7 & +9 & +11 & +13 \end{array}$$

2. 2, 6, 12, 20, 30, 42, 56,

- (1) 63 (2) 67 (3) 69 (4) 72 (5) 74

Ans. (4)

Sol.
$$\begin{array}{cccccccc} 2 & 6 & 12 & 20 & 30 & 42 & 56 & 72 \\ & +4 & +6 & +8 & +10 & +12 & +14 & +16 \end{array}$$

3. 14, 28, 20, 40, 32, 64,

- (1) 56 (2) 46 (3) 58 (4) 48 (5) 72

Ans. (1)

Sol.
$$\begin{array}{ccccccc} 14 & 28 & 20 & 40 & 32 & 64 & 56 \\ & +14 & -8 & +20 & -8 & +32 & -8 \end{array}$$

4. 0, 3, 8, 15, 24,

- (1) 35 (2) 37 (3) 40 (4) 39 (5) 38

Ans. (1)

Sol.
$$\begin{array}{ccccccc} 0 & 3 & 8 & 15 & 24 & 35 \\ & +3 & +5 & +7 & +9 & +11 \end{array}$$

5. 12, 26, 54, 110, ...

- (1) 222 (2) 224 (3) 220 (4) 228 (5) 226

Ans. (1)

Sol.
$$\begin{array}{ccccccc} 12 & 26 & 54 & 110 & 222 \\ & +14 & +28 & +56 & +112 \\ & \times 2 & \times 2 & \times 2 & \end{array}$$

Question (6 to 10) are based upon letter analogy. There are two pairs of letter combination in each question. The first (left hand side) pair has some relationship between its members. In the second pair, one member is missing. Find this out from answer (1), (2), (3), (4) and (5) such that this pair has similar relationship as the first pair. Indicate your answer as per the “instructions”.

6. LKJ : MNO :: DCB : ?

- (1) FEG (2) EGF (3) FGH (4) EFG (5) FGE

Ans. (4)

Sol. L K J : M N O :: D C B : (EFG)

7. ADGJ : BEHK :: KNQT : ?

- (1) LOPS (2) LMRU (3) LORU (4) LMPS (5) LNQT

Ans. (3)

Sol. A D G J : B E H K :: K N Q T : (L O R U)

8. HJLN : PRTV :: BDFH : ?

- (1) JKOR (2) JMOR (3) JLNP (4) JMNP (5) JKMO

Ans. (3)

Sol. HJLN : PRTV :: BDFH : (JLNP)

(alternate alphabets)

9. QSUW : XZBD :: BDFH : ?

- (1) IMOK (2) IMKO (3) IKMO (4) HKMO (5) JKMO

Ans. (3)

Sol. QSUW : XZBD :: BDFH : (IKMO)

(+7) pattern

Q + 7 = X, S + 7 = Z

10. DRIVEN : NEVIRD :: BEGUM : ?

- (1) EBGMU (2) MUGEB (3) MEUBG (4) UGMEB (5)

Ans. (2)

Sol. DRIVEN : NEVIRD :: BEGUM : MUGEB

Reverse pattern

Directions :

Questions (11 to 15) : In the following questions, letters / letter groups are arranged in a particular order with some underlying criterion. Study the order and choose the answer from the alternatives to fill the gaps..

11. YVP, WTN, URL,

- (1) TQL (2) SRJ (3) SPJ (4) TRJ (5) TPJ

Ans. (3)

Sol. YVP, WTN, URL, (SPJ)

1st term → -2 rule

2nd term → -2 rule

3rd term → -2 rule

12. QPO, NML, KJI, HGF,

- (1) ECD (2) CEG (3) CDE (4) CEF (5) EDC

Ans. (5)

Sol. QPO, NML, KJI, HGF, (EDC)

1st term → -3 rule

2nd term → -3 rule

3rd term → -3 rule

13. AB, DEF, HIJK, STUVWX

- (1) MNOPQ (2) LMNOP (3) LMNO (4) MNOP (5) QRSTU

Ans. (1)

Sol. AB, DEF, HIJK, (MNOPQ), STUVWX

Conjunctive alphabets, and in every term, number of terms increases by 1.

14. GTB, CYV, YDP,, QND

- (1) DIV (2) UIJ (3) DDV (4) UVV (5) VJK

Ans. (2)

Sol. GTB, CYV, YDP, (UIJ), QND

1st term → -4 rule

2nd term → +5 rule

3rd term → -6 rule

15. KJAM, GGWJ,, YAOD, UXKA

- (1) CDUI (2) DFTC (3) CDTF (4) CDSG (5) DEVG

Ans. (4)

Sol. KJAM, GGWJ, (CDSG), YAOD, UXKA

1st term → -4 rule

2nd term → -3 rule

3rd term → -4 rule

4th term → -4 rule

Directions :

Questions (16 to 20) : In each of the following questions, five words are given. Four of them are alike in some way. One is different from them. Identify it and indicate as per "Instructions"

16. (1) Asia (2) Europe (3) Antarctica (4) Africa (5) Austria

Ans. (5)

Sol. All are continents except Austria.

17. (1) Brazil (2) Bangladesh (3) China (4) Cambodia (5) Mangolia

Ans. (1)

Sol. All are Asian countries except Brazil.

18. (1) Hyderabad (2) Itanagar (3) Patna (4) Mysore (5) Trivandram

Ans. (4)

Sol. All are capitals except Mysore.

19. (1) Hard disk (2) Monitor (3) Keyboard (4) Mouse (5) Windows XP

Ans. (5)

Sol. All are Hardwares except window XP.

20. (1) Spider (2) Butterfly (3) Cockroach (4) Mosquito (5) Housefly

Ans. (1)

Sol. All except spider are flying insects.

Directions :

Questions (21 to 25) : In these questions there is a certain relationship between two words on one side of ::, and only one word is given on the other side of ::. The missing word is to be found out from the given alternative (1), (2), (3), (4) and (5), so that the relationship is the same as for the other pair. Identify the correct answer and indicate it as per "Instructions".

21. French : France :: Dutch : ?

(1) Holland (2) Norway (3) Fiji (4) Sweden (5) Denmark

Ans. (1)

Sol. Dutch language → Holland

22. India : Mango :: New Zealand : ?

(1) Apple (2) Pineapple (3) Kiwi (4) Grapes (5) Strawberry

Ans. (3)

Sol. National fruit of Newzealand → Kiwi

23. Player : Coach :: Pupil : ?

(1) Word (2) Teacher (3) Class (4) School (5) Education

Ans. (2)

Sol. Pupils are trained by teachers.

24. The Race of My Life : Milkha Singh :: The Test of My Life : ?

(1) Gandhi (2) Yuvraj Singh (3) Sachin Tendulkar (4) Kapil Dev (5) Ricky Ponting

Ans. (2)

Sol. The test of my life look is written by Yuvraj Singh

25. TRS : CAR :: SAMAJWADI PARTY : ?

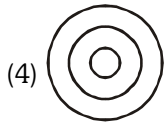
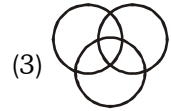
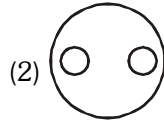
(1) Brow and Arrow (2) Elephant (3) Arrow (4) Bicylc (5) Rising Sun

Ans. (4)

Sol. Logo of Samajwadi Party → Bicycle

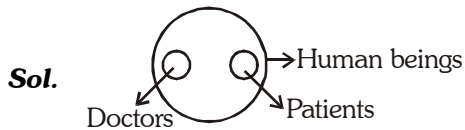
Directions :

Questions (26 to 30) : are based on the following diagrams. Study them carefully and indicate correct answer as per "Instructions".



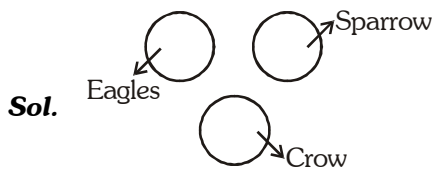
26. Doctor, Patient, Human being

Ans. (2)



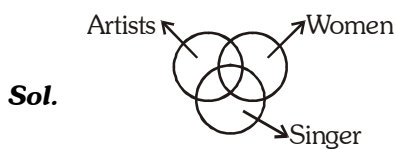
27. Sparrows, Crows, Eagles

Ans. (5)



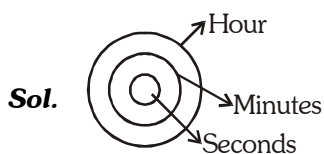
28. Artists, Singers, Women

Ans. (3)



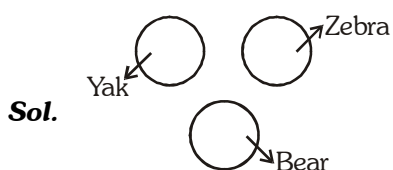
29. Hour, Minutes, Seconds

Ans. (4)



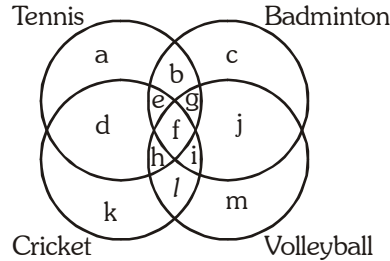
30. Yak, Zebra, Bear

Ans. (5)



Directions :

Questions (31 to 35) : With the help of the given diagram answer the following questions making the right choice from the given alternatives. Indicate the answer as per “Instructions”.



31. Which letter represents the set of persons who play all the games?

- (1) e (2) g (3) f (4) h (5) i

Ans. (3)

Sol. By observation

32. Which letter represents the set of persons who play tennis and badminton only?

- (1) a (2) b (3) c (4) e (5) g

Ans. (2)

Sol. By observation

33. Which letter represents the set of persons who play only cricket?

- (1) d (2) h (3) k (4) l (5) f

Ans. (3)

Sol. By observation

34. Which letter represents the set of persons who play all the other three games except cricket?

- (1) e (2) b (3) j (4) g (5) i

Ans. (4)

Sol. By observation

35. Which letter represents the set of persons who play tennis, badminton and cricket but not volleyball?

- (1) a (2) b (3) c (4) e (5) g

Ans. (4)

Sol. By observation

Directions :

Questions (36 to 38) : If in certain language CHARCOAL is coded as 45164913 and MORALE is coded as 296137, how are the following words coded? Identify the right answers and indicate it as per the “Instructions”.

36. REAL

- (1) 6713 (2) 6513 (3) 6719 (4) 6519 (5) 6715

Ans. (1)

Sol. REAL → 6713

37. COACH

- (1) 49148 (2) 48246 (3) 49145 (4) 49246 (5) 49146

Ans. (3)

Sol. COACH → 6713

38. COLLER

(1) 397758

(2) 497758

(3) 483359

(4) 493376

(5) 395576

Ans. (4)

Sol. COLLER \rightarrow 493376

Directions :

Questions (39 to 42) are based on simple arithmetic principles. Find the right answer from the alternatives and indicate it as per the "instruction".

39. If $\sqrt{625} = 25$, then value of $16 \times \sqrt{0.000625}$ equals to

(1) 0.040

(2) 0.004

(3) 0.400

(4) 4.000

(5) None of these

Ans. (3)

Sol. $16 \times \sqrt{\frac{625}{(10)^6}} = \frac{16 \times 25}{1000} = \frac{2}{5} = 0.400$

40. $1 + \frac{2}{1 + \frac{3}{1 + \frac{4}{1 + \frac{5}{1}}}} = \dots$

(1) $\frac{7}{4}$

(2) $\frac{4}{7}$

(3) $\frac{7}{5}$

(4) $\frac{3}{7}$

(5) $\frac{5}{7}$

Ans. NA

41. $\frac{0.125 + 0.027}{0.5 \times 0.5 + 0.09 - 0.15}$ is equal to

(1) 1

(2) 0.8

(3) 0.08

(4) 0.2

(5) 0.88

Ans. (2)

Sol. $\frac{0.125 + 0.027}{0.5 \times 0.5 + 0.09 - 0.15} = \frac{(0.5)^3 + (0.3)^3}{(0.5)^2 + (0.3)^2 - (0.5)(0.3)} = 0.5 + 0.3 = 0.8$

42. If $\frac{x}{4} - \frac{x-3}{6} = 1$, then x =

(1) 1

(2) 3

(3) 4

(4) 6

(5) 2

Ans. (4)

Sol. $\frac{x}{4} - \frac{x-3}{6} = 1$

$$\frac{3x - 2(x-3)}{12} = 1$$

$$3x - 2x + 6 = 12$$

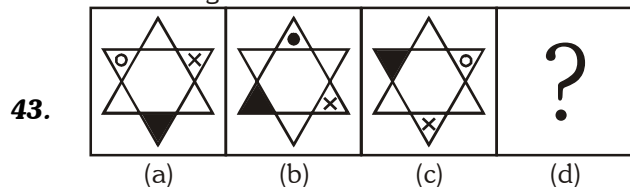
$$x = 12 - 6$$

$$x = 6$$

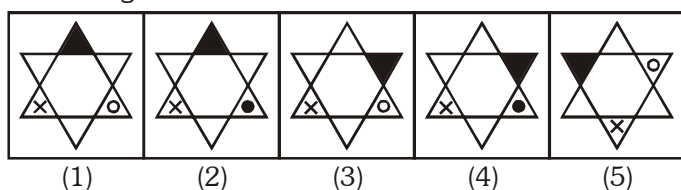
Directions :

Questions (43 to 46) : Each question has four problem figures a, b, c and d. Figure 'd' has only a question mark '?'. Figure 'b' bears certain relationship to 'a', similarly one of the answer figures bears similar relationship to 'c'. Find out and indicate it as per "Instructions".

Problem figures



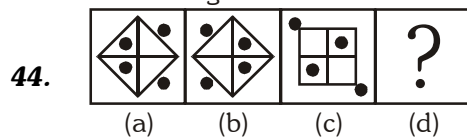
Answer figures



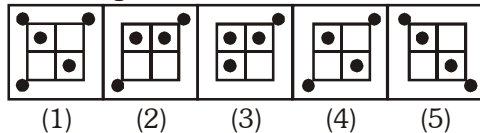
Ans. (2)

Sol. By observation

Problem figures



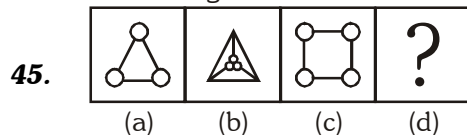
Answer figure



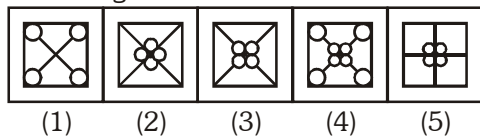
Ans. (4)

Sol. By observation

Problem figures



Answer figure

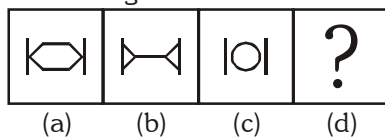


Ans. (3)

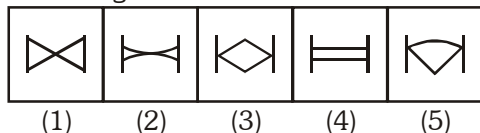
Sol. By observation

Problem figures

46.



Answer figure



Ans. (2)

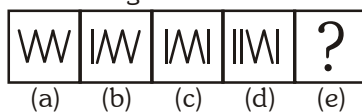
Sol. By observation

Directions :

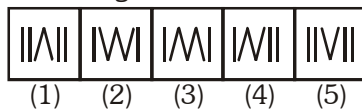
Questions (47 to 50) : In these questions, there are five problem figures (a), (b), (c), (d) and (e). Figure in (e) is, however, missing. You have to select one figure from the five answer figures (1), (2), (3), (4) and (5) such that the series is completed. Indicate your answer as per the "Instructions".

Problem figures

47.



Answer figures

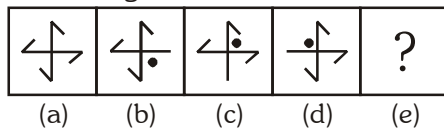


Ans. (5)

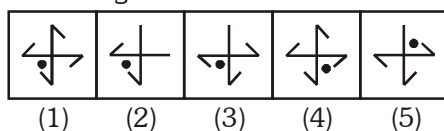
Sol. By observation

Problem figures

48.



Answer figures

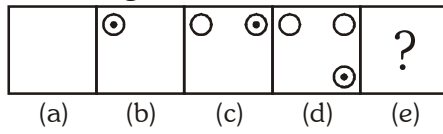


Ans. (2)

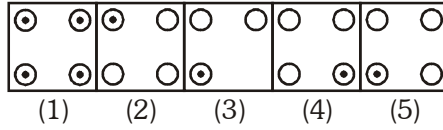
Sol. By observation

Problem figures

49.



Answer figures

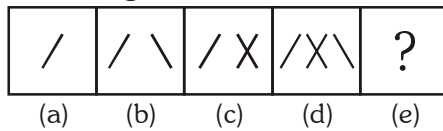


Ans. (5)

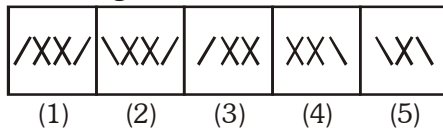
Sol. By observation

Problem figures

50.



Answer figures



Ans. (3)

Sol. By observation