5. AISSEE – 2017

Paper – I (Mathematics and Language)
(Each question carries 2 marks)

1. Find $\frac{5}{7}$ of $2\frac{1}{3}$ kg.

Sol: $\frac{5}{7}$ of $2\frac{1}{3}$ kg = $\frac{5}{7} \times \frac{7}{3}$ kg

= $\frac{5}{3}$ kg

= $1\frac{2}{3}$ kg

2 Arrange the numbers in ascending order 613997, 514037, 514245, 631460.

Sol: Ascending order is 514037, 514245, 613997 and 631460.

3. Convert the following into cm: 5 hectometers, 7 decameters, 4 metres, 3 kilometres

Ans. 5 hectometers = 5 x 100 x 100 cm

= 50000 cm

7 decameters = 7 x 10 x 100 cm

= 7000 cm

4 metres = 4 x 100 cm

3 kilometres = 3 x 1000 x 100 cm

= 300000 cm

4. A boy scores 30% marks out of a total of 500. He fails by 50 marks. What is the pass marks?

Sol: Required Pass Marks

= $\frac{30}{100}$ x 500 + 50

= 150 + 50 = 200

5. If Ram has to travel $1\frac{1}{4}$ km to reach his school from home what is the total distance that he has to travel to go to school and come back?

Sol: Total distance = $1\frac{1}{4} + 1\frac{1}{4}$

= $2\frac{1}{2}$ km

6. Ramesh had Rs. 42000. He gave $\frac{2}{7}$ part of this amount to Mohit and $\frac{3}{7}$ part to his mother. How much money is left with Ramesh?

Sol: Total given part $\frac{2}{7} + \frac{3}{7} = \frac{5}{7}$

Remaining part $1 - \frac{5}{7} = \frac{2}{7}$

Money left with Ramesh = 42000 x $\frac{2}{7}$

= Rs. 12000

7. Simplify the following – 25 + 16 – 3 x 4 ÷ 2

Sol: 25 + 16 – 3 x 4 ÷ 2 = 41 – $\frac{3 \times 4}{2}$

= 41 – 6 = 35

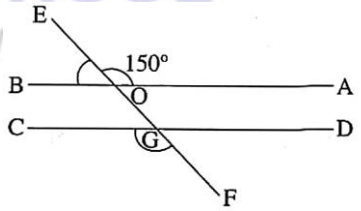
8. Find the average of first 10 multiples of 5.

Sol: Average = $\frac{30+35+40+45+50}{10}$

= $\frac{275}{10}$

= 27.5

9. Find ∠BOE and ∠CGF from the following figure –



Sol. In the given figure AB II CD and EF is a transversal line

∠AOE = 150°

∠BOE + ∠AOE = 180° (Straight angle)

∠BOE + 150° = 180°

∠BOE = 180° – 150° = 30°

∠ BOF = <AOE = 150°

Also ∠BOF = ∠AOE = 150°

(Vertically opposite angles)

∠CFG = ∠BOF

(Corresponding angles)

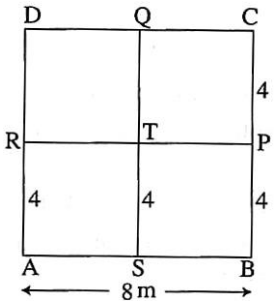
$\angle$ CFG = 150°

10. The side of a square is 8 m. The same square is divided into four equal squares. Find area of each small square?

Sol. Length of one side of square = ABCD

= 8 m

Length of one square (small) = 4 m



Area of small = 4 x 4 = 16 m²

Section – II

(Each question carries 3 marks)

11. **Find the square root of the following:** $\frac{361}{441}$

Sol. Square root of $\frac{361}{441}$

Square root of $\frac{361}{441} = \sqrt{\frac{361}{441}} = \frac{19}{21}$

12. Ramesh and Suresh divide Rs. 250 in such a way that Ramesh gets 4 times the share of Suresh. Find the share of both.

Sol. Ramesh ; Suresh = 4: 1

Total share = 4 + 1

= 5

Ramesh's share = $\frac{4}{5}$ x 250

= Rs. 200

Suresh's share = Rs. $\frac{1}{5}$ x 250

= Rs. 50

13. How many rectangular tiles or $2\frac{1}{2}$ m x 2 m are required for tilling a rectangular courtyard of 30m x $17\frac{1}{2}$ metre?

Sol. Number of tiles = $\frac{30 \times 35 \times 2}{2 \times 5 \times 2}$

= 105

14. A cars travels 58 km in the first hour, 62 km in second hour and 75km in the third hour. Find the average speed of the car.

Sol. Average speed = $\frac{58+62+75}{1+1+1}$ km/hr

= $\frac{195}{3}$ km/hr

= 65 km/hr

15. If the area of a circular park is 616 m², find the circumference of the park.

Sol. Let r m be the radius of the circular part

$\pi r^2 = 616$

$r^2 = \frac{616 \times 7}{22}$

$r^2 = 28 \times 7$

$r^2 = 4 \times 7 \times 7$

$r = 2 \times 7$

$r = 14$ m

Perimeter of the park = $2\pi r$

= $\frac{2 \times 22}{7}$ x 14 m

= 2 x 22 x 2 m

= 88 m

16. Shyam deposit Rs. 3000 in to his Bank account which earns him a simple interest of 5% per annum. What is the amount that he will get after one year?

Sol. P = Rs. 3000, r = 5%, t = 1 year

Simple Interest = $\frac{P \times r \times t}{100}$

= $\frac{3000 \times 5 \times 1}{100}$

= Rs 150

Amount = 3000 + 150

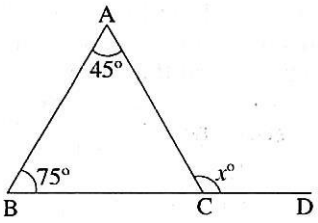
= Rs. 3150

17. What should be added to $3\frac{2}{5}$ to get $5\frac{3}{5}$?

Sol. $5\frac{3}{5} - 3\frac{2}{5} = \frac{28}{5} - \frac{17}{5} = \frac{11}{5}$

We should add $\frac{11}{5}$ to $3\frac{2}{5}$ to get $5\frac{3}{5}$

18. Find the value of x in the following diagram:



Sol. From the given figure $x = 75^o + 45^o$
(Exterior angle is equal to sum of two Remote interior angles) $x = 120^o$

19. A TV is bought at Rs. 6750 and sold at a profit of Rs. 500 after spending Rs. 350 on its repairs. Find the Selling Price.

Sol. Required selling price
= (6750 + 350) + 500
= Rs. 7600

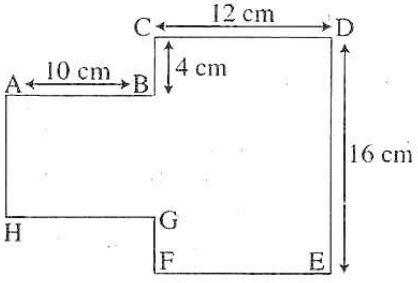
20. Mithun's brother sent him 10 US dollars from America Mithun used Rs. 350 from this amount. How much money (in Rupees) is left with him? (1 US dollar = Rs. 68)

Sol. One dollar = Rs. 68
10 dollars = 68 x 10 = Rs. 680
Money used = Rs. 350
Money left = 680 – 350 = Rs. 330

Section – III

(Each question carries 5 marks)

21. If BC = FB in the given diagram, find value of AH, perimeter and area of the given shape.



Sol. From the given figure,
BC = GF = 4 cm
BG = (16-8) cm
= 8 cm
AH = 8 cm
Perimeter of the figure
= AB + BC + CD + DE + EF + GF + GH + AH
= 10 + 4 + 12 + 16 + 12 + 4 + 10 + 8
= 76 ,
Area = (16 x 12) + (10 x 8)
= 192 + 80
= 272 cm^2

22 Two cities A and B are 450 kms apart from each other. A bus starts from 'A' at 7:40 AM at a speed of 50 km/hour and it has a total stoppage time of 45 mins. What time will it reach station 'B'?

Sol. Time taken by bus to travel 450 km at the speed of 50 km/hr = $\frac{450}{50}$
= 9 hrs
Stoppage time = 45 minutes
Total time = 9: 45 hours
Bus started at 7:40 (A)M.
Bus will reach the station B at = (7.40 am + 9 hr. 45 minutes)
= 17:25 hrs.
= 5: 25 P.M.

23. One number exceeds another number by 38. If sum of both numbers is 88, find the numbers.

Sol. Let the number be x.
$x + x + 38 = 88$
$2x = 88 - 38$
$2x = 50$
$x = 25$
Numbers are 25 and 88 – 25 i.e. 63

24. The length of a rectangular park is 0.110 km and its breadth is 70 m. What is the perimeter of the park in metres? Three rounds of barbed wire are needed to fence the park. Find the cost of fencing the park if the barbed wire costs Rs. 3.40 per metre.

Sol. Length of the park = 0.110 x 1000 m

= 110 m

Breadth of the park = 70 m

Perimeter of the park = 70 m = 2 x 180

= 360 m

Total perimeter for fencing with barbed wire

= 3 x 360

= 1080 m

Total cost = 1080 x 3.40

= Rs. 3672

25. The population of a city increases 5% per annum. If in 2016, its population is 89,250 what was its population in 2015.

Sol. Population of the year 2015

$$= \frac{100 \times 89250}{105}$$

= 85000

26. The average age of five boys is 13 years. One more boy joins them and the average age becomes 12 years. Find the age of the boy who joins the group later?

Sol. Total age of 5 boys = 13 × 5 = 65 years

Let the age of the new boy be x years.

$$\frac{65 + x}{6} = 12$$

$65 + x = 72$

$x = 72 - 65$

$x = 7$

Age of the new boy is 7 years.

27. Anil got 60 marks out of 125, Ankit got 140 marks out of 280. Whose score is better and why?

Sol. Anil's marks $= \frac{60}{125} \times 100\%$

= 48%

Ankit's marks $= \frac{140}{280} \times 100\%$

= 50%

Ankits score is better as 50% > 48%.

28. A Cuboid is 6 cms long, 3 cms broad and 3 cms high, while a Cube has an edge of 6 cms. Which has a greater volume and how much?

Sol. Volume of the child

= 6 x 3 x 3 cm^3

= 54 cm^3

Volume of the cube = 6 × 6 × 6 = 216 cm^3

Therefore volume of the cube is more than the volume of cuboid

Difference = 216 – 54 = 162 cm^3

29. $\frac{5}{7}$ part of a village population is uneducated If the number of educated is 3450, find the population of the village?

Sol. Part of educated population

$$= 1 - \frac{5}{7} = \frac{2}{7}$$

Total population $= \frac{7 \times 3450}{2}$

= 12075

30. Three bells ring at intervals of 12, 15 and 18 minutes. They rang together at 10:30 AM. When will they ring together next?

Sol. LCM of 12, 15, 18

2	12, 15, 18
3	6, 15, 9
	2, 5, 3

L.C.M. = 2 × 3 × 2 × 5 × 3

= 180 minutes

= 3 hrs.

The bells will ring together at (10.03 + 3) hrs.

= 13.30 hrs

= 1.30 P.M.

Part – 'B' (Language Ability)

[Marks: 100]

1. Write 15 sentences on anyone of the following topic – (15)

(a) My favourite TV programme

(b) How did I prepare for this exam?

Sol. My favourite TV programme

I love watching T.V. I generally watch cricket matches and some serials for 10 to 15 minutes only. My favourite serial is "Best of Luck Nikki" which I watch for one hour daily. It is telecasted on Disney Channel every day from 6 P.M. to 7 P.M. This a comedy serial in which "Nikki" is the main character, a naughty funny girl. Nikki has a large family consisting of two brothers, two sisters and parents. They live in a colony in Delhi. The story is about funny loving nature involving Nikky's family and neighbours. Nikki's elder sister is making a video diary of childhood memories and funny activities of Nikki. My parents and myself laugh many times repeatedly while watching this serial. I like this serial because its characters are witty, humorous and funny. This serial teaches us to be respectful to the elders and be relaxed in our life.

2. Read the following passage carefully and answer the question that follows –

Once upon a time, not so very long ago, there was a small boy named Hari. Although he wasn't very big, he was strong and he loved to tease all the boys and girls who went to school with him. What he loved to do the most was to pinch. He could make a big bruise appear in half a second. Another trick he played was pricking people with a pin.

So you can guess how all the children hated him, they tried pinching him back, but that was no good because he could always pinch harder. They didn't like telling his teacher, because it was like telling tales.

It so happened that the class went for a picnic to the seaside for a whole day. All the children were most excited

On that day, the sun shone bright and all the children were wild with excitement. They crowded into the train and sat down – but nobody wanted to sit next to Hari because he always pinched

(a) What did Hari do to boys and girls who went to school with him? (2)

(b) What he loved to do the most? (2)

(c) What happened to Hari when he went for the picnic? (2)

(d) Give meaning of these words – (3)

(e) The class went for a picnic to the sea side. (2)

Sol. (a) Hari used to tease the girls and boys who went school with him.

(b) Generally he used to pinch the fellow students.

(c) All the students denied to sit near Hari when he went for the picnic

(d) (i) Bruise – injure, wound

(ii) Prick – make some hole in

(iii) Crowded – Large gathering of people.

(e) The class went for a picnic to the sea side.

3. Use the given words in separate sentences of your own to show the difference in the meaning of the words of the pair given below:

(a) See, Sea

(b) Break, Brake

(c) Pray, Pray

(d) Through, Throw

(e) Hear, Here

Sol. (a) see – I see one T.V. serial daily.

sea – Last year I went to sea-share.

(b) Break – All students enjoy lunch break.

Brake – I generally apply only one brake to stop my cycle.

(c) Pray – My grandfather pray to God daily in the morning.

Prey – Rats are prey for eats.

(d) Through – It is very difficult to go through a crowd.

Throw – I throw the cricket ball very fast.

(e) Hear – I like to hear music.

Here – Come and sit here.

4. Rearrange these words to make meaningful sentences – (5 × 2 = 10)

(a) rained / yesterday / it / heavily

(b) of / has become / the computer / a part / our lives

(c) cricket / she / no / interest / has / in

(d) in / helps / my mother / home work / me / my

(e) godliness / cleanliness / to / next / is

Sol.

(a) It rained heavily yesterday.

(b) The computer has become a part of our lives.

(c) She has no interest in cricket.

(d) My mother helps me in my homework.

(e) Cleanliness is next to godliness.

5. Give one word substitutes for the following - (5 x 1 = 5)

(a) One who is unmarried?

(b) One who believes in God?

(c) Incapable of being explained or accounted for

(d) One who looks at the brighter side of things?

(e) A person who writes songs

Sol.

(a) Bachelor (b) Theist

(c) In explicable (d) Optimist

(e) Lyricist

6. Choose the correct word given in the brackets and fill in the blanks – (5 x 2 = 10)

(a) The police nabbed a ……. dacoit last night. (famous/notorious)

b) Madhu is …… only daughter of her parents. (an / a / the)

(c) The clown went …….. the ring of fire. (in/through)

(d) The boy did not ……. to his class. (go/went)

(e) Neither of these two books ……. interesting. (are/is)

Sol.

(a) notorious (b) the

(c) through (d) go

(e) is

7. Give the synonyms of the following words - (5 x 1 = 5)

(a) Former (b) Profit

(c) Hate (d) Occur

(e) Tale

Sol.

(a) Previous (b) Gani

(c) Dislike (d) Happen

(e) Story

8 Give the antonym (opposite) of the following words - (5 x 2 = 10)

(a) Fail (b) Interested

(c) Lenient (d) Proud

(e) Pleasant

Sol.

(a) Pass (b) Disinterested

(c) Merciless (d) humble

(e) Hateful

9. Change each of the following as directed (5 x 2 = 10)

(a) He writes a story.

(Change into Interrogative sentence)

(b) I expected him to do the work.

(Change into Negative)

(c) Will she do it?

(Change into assertive)

(d) He has no interested in cricket

(Change into affirmative)

(e) I met him with my friend in the park yesterday.

(Change into Simple Future Tense)

Sol.

(a) Does he write a story?

(b) I did not expect him to do the work.

(c) She will do it.

(d) He is interested in cricket.

(e) I shall meet with my friend in the park tomorrow.

10. You are Vijay and you live at 16-B, Kailash Enclave, New Delhi. Your uncle has sent you a present on your birthday. Write a letter to thank him and tell him how his present is very useful and special to you. (15)

Sol.

Vijay
16-B, Kailash Enclave
New Delhi
Dated: 7 Feb, 2017

Dear Uncle,

Hope this letter finds you in good health yesterday. I received and Eye and pad (Apple) sent by you through courier as my birthday present. I was thrilled with joy on getting this Eye pa(d) This Eye pad will help me in enhancing my academic performance. Uncle, thank you again for sending such a nice birthday present.

Please convey my regards to Aunt and love for Ankur.

With regards,

Your loving nephew
Vijay

Paper – II (Intelligence Test)

Time: 40 Min **Max. Marks: 100**

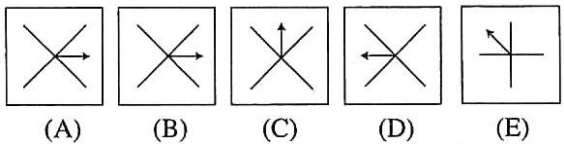
Directions (1 - 10): Consists of five choices (a), (b), (b), (d) and (e). Out of the five given choices in each problem four are similar in one way. However, one choice is not like the other four. Choose the choice which is different from the rest and write the answer in the box.

1. (a) Friend : Enemy (b) Near : Far
   (c) Enjoy : Laugh (d) Big : Small
   (e) Love : Hate

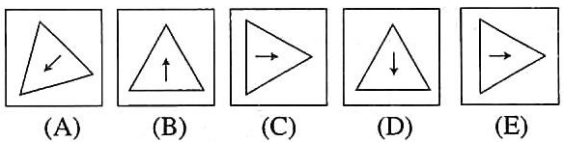
2. (a) India (b) Nepal
   (c) Chennai (d) Pakistan
   (e) England

3. (a) Ear (b) Nose
   (c) Heart (d) Hand
   (e) Eye

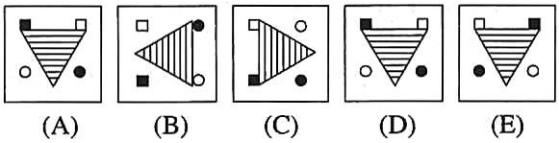
4. CURD : MILK : SHOE : ?
   (a) JUTE
   (b) LEATHER
   (c) CLOTH
   (d) SILVER

5. 

   (a) a (b) b
   (c) c (d) d

6. 

   (a) a (b) b
   (c) c (d) d

7. 

   (a) a (b) b

(c) c (d) d

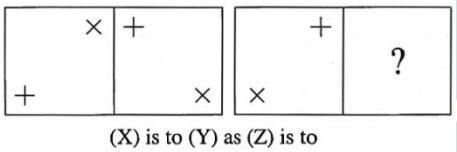
8. (a) 1 – 3 (b) 4 – 12
(c) 2 – 5 (d) 5 – 15
(e) 7 – 21

9. (a) FEG (b) KJL
(c) MLN (d) RQP
(e) VUW

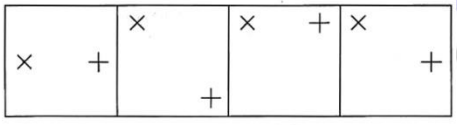
10. (a) 9-19 (b) 5-11
(c) 6-13 (d) 7-15
(e) 8-16

Directions (11 - 15): In the following question, (X), (Y), (Z) constitute the problem set, while choices (A), (B), (C), (D) constitute the answer set. There is a definite relationship between choice (X) and (Y). Your task is to establish a similar relationship between the choice (Z) and one of the answer choices given in the answer set (A), (B), (C) and (D).

11.

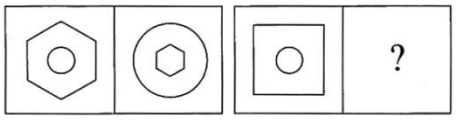


(X) is to (Y) as (Z) is to

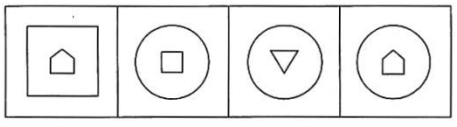


(A) (B) (C) (D)

12.

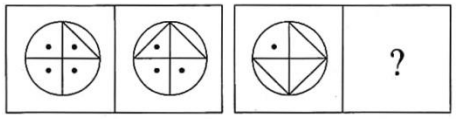


(X) is to (Y) as (Z) is to

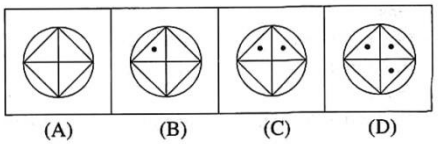


(A) (B) (C) (D)

13.

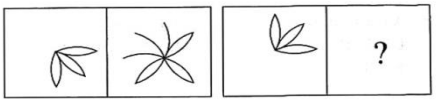


(X) is to (Y) as (Z) is to

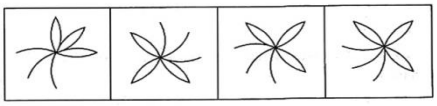


(A) (B) (C) (D)

14.

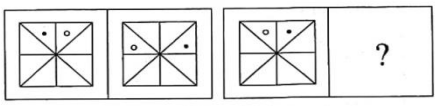


(X) is to (Y) as (Z) is to

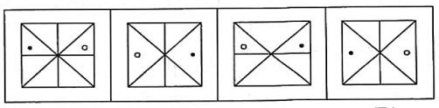


(A) (B) (C) (D)

15.



(X) is to (Y) as (Z) is to



(A) (B) (C) (D)

Directions (16 - 20): Choose the right answer and write the answer in the box.

16. 'Eye' is to 'See' as 'Ear' is to ---
(a) Sound (b) Taste
(c) Ring (d) Smell

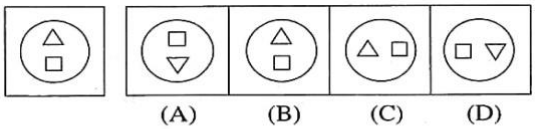
17. 'Carpenter' is related to 'Furniture' in the same way 'Goldsmith' is related –
(a) Shoes (b) Gold
(c) Jewellery (d) Metal

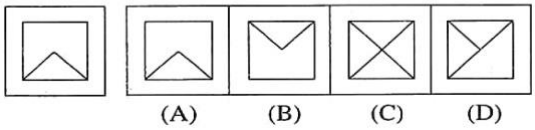
18. 'Page' is related to 'Book' as 'Leaf' is related to –
(a) Root (b) Tree
(c) Green (d) Forest

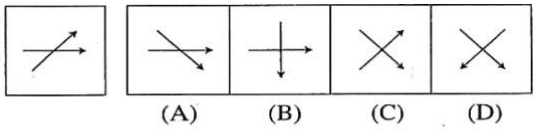
19. 'Examination's related to 'Success' as 'Match' is related to –
(a) Play (b) Win
(c) Rafree (d) Goalkeeper

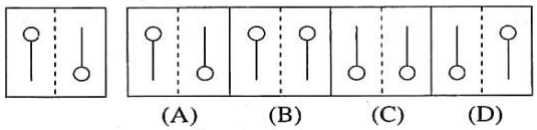
20. 'Bull' is related to 'Cow' in the same way 'Horse' is related to –
(a) Elephant (b) Mare
(c) Colt (d) Lion

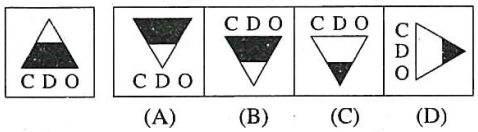
Directions (21 - 30): In each of the following figure there is a problem figure followed by four answer figures. One of the answer figures is the water-image of the problem figure. Find this water image.

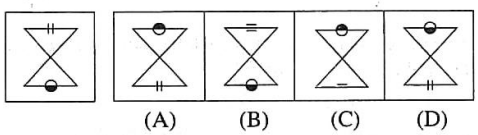
21. 

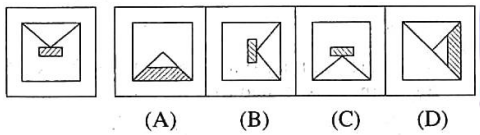
22. 

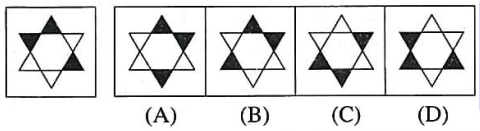
23. 

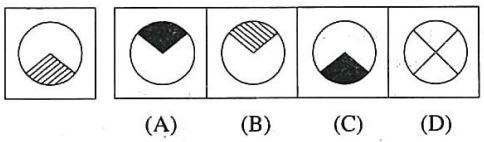
24. 

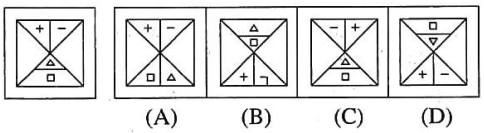
25. 

26. 

27. 

28. 

29. 

30. 

31. In a certain code ABCD is written as BCDE. How will RSTU be written in the same code?
(a) RSVU (b) RSTV
(c) STUV (d) RVST

32. In a certain code PARK is written as OARK. How will LARK be written in the same code?
(a) KARK (b) SAKR
(c) AKRK (d) BARK

33. If BCD = 9 and AEF = 12, then DEL = ?
(a) 21 (b) 24
(c) 17 (d) 20

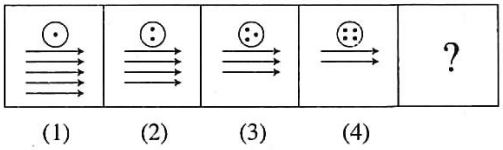
34. If AKMAL is coded as 17914, then KAMAL will be coded as –
(a) 71914 (b) 19714
(c) 14971 (d) 19417

35. If C – C, M – 13, O – 15, then NAME will be –
(a) 113415 (b) 19714
(c) 14971 (d) 19417

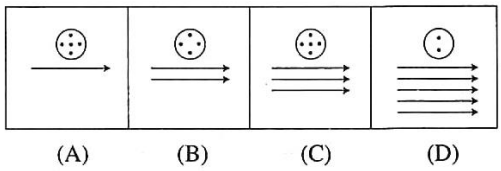
Directions (36 - 45): Write the correct choice which will continue the series.

36. 8, 8, 7, 9, 6, 10……..
(a) 11 (b) 5
(c) 6 (d) 4

37. O, Q, S, U, W, …..
(a) X (b) Y
(c) Z (d) T

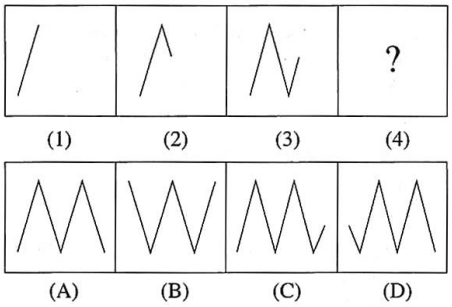
38. 

(a) a (b) b
(c) c (d) d

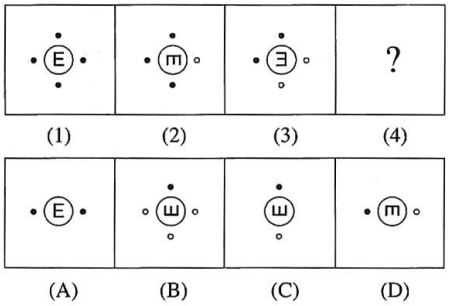
39. 

(a) a (b) b
(c) c (d) d

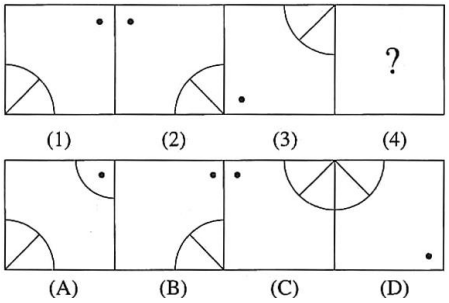
40. 45, 54, 63, 72
(a) 76 (b) 81
(c) 85 (d) 90

41. 

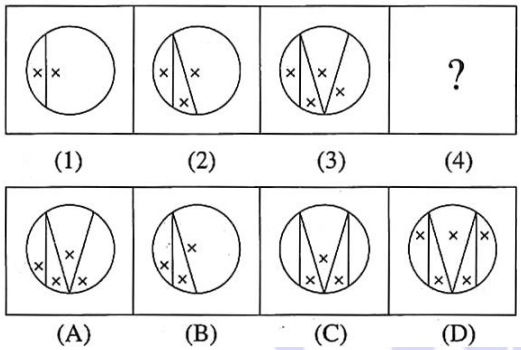
42.



43.



44.



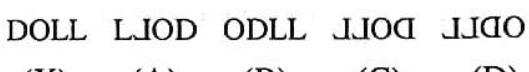
45. 1, 3, 4, 7, 11 ……

(a) 21 (b) 18

(c) 20 (d) 19

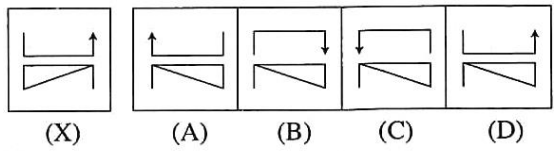
Directions (46 - 50): Choose the correct mirror image of the figure (*x*) from the four alternatives given along it.

46.

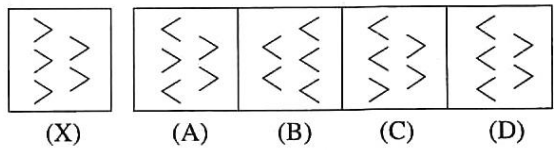


47.

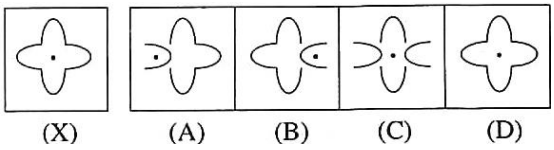
48.



49.



50.



Hints and Solution

1. (c) Except (c) all other words are opposite words in pairs.
2. (c) Except Chennai all other are countries.
3. (c) Hear is inside the body other parts are outer side of the body.
4. (b) Curd is made from milk and shoe is made of leather.
5. (e)
6. (d)
7. (b)
8. (c) Except the pair 2-5 all other pair are in the rates 1:3.
9. (d) Middle letter, first letter and third letter form a series as FEG is EFG, KJL is JKL et(c) but the same pattern does not exist in ROP.
10. (e) In the choices (A), (B), (C) and (D) the second number is one more than the twice the first number. This rule is not followed in (e).

11. b	12. b	13. a	14. c	15. a
16. a	17. c	18. b	19. b	20. b
21. a	22. b	23. a	24. d	25. b
26. a	27. c	28. c	29. b	30. d

31. (c) ABCD is coded as BCDE.

i.e.,
A B C D
↓ ↓ ↓ ↓
B C D E

Therefore, RSTU will be coded as

R S T U
↓ ↓ ↓ ↓
S T U V

32. (a) In this question, last three letters do not change but first letter is changed into its preceding letter, P is changed to O. Therefore, LARK will be written as KARK.
33. (a) If we consider A – 1, E – 5 then BCD = 2 + 3 + 4 = 9, AEF = 1 + 5 + 6 = 12, therefore, DEL = 4 + 5 + 12 = 21.
34. (a) AKMAL is coded as 17914 i.e., A – 1, K – 7, M – 9, A – 1, L – 4, therefore, KAMAL will be coded as 71914.
35. (b) Here, C – 3, M – 13, O – 15, therefore, A – 1, B – 2, C – 3, D – 4, E – 5, N – 14, NAME will be coded as 141135.
36. (b) In this series, numbers at odd places are decreasing and numbers at even places are increasing, therefore, number 5 will occupy the blank space.
37. (b) In this letters are increasing by two places. Therefore, letter 'Y' will occupy the blank space.

38. a	39. c	40. b	41. a	42. b
43. d	44. d	45. b	46. c	47. d
48. a	49. b	50. d		