



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

## IBPS SO IT Model Paper

Q1. This question consists of an information and two statements numbered I and II given below it. You have to decide which of the given statements weaken/s or strengthen s the information and decide the appropriate answer.

**Information :** Since the past three years, more number of students in country G are opting for law courses as compared to the earlier years.

I. The number of applications for admission in law colleges of country G has been consistent since the past 5 years.

II. The number of students ready to pay heavy donations to get admission in the most sought after law college of

Country G are consistently increasing for past three years.

- (1) Both statement I and statement II are neutral statements.
- (2) Both statement I and statement II weakens the information.
- (3) Statement I strengthens the information while statement II weakens the information.
- (4) Statement I weakens the information while statement II strengthens the information.
- (5) Both statement I and statement II strengthen the information.

Q2. Study the following information to answer the given question. Patients of lung ailments were mostly prescribed Medicine X which contains only two constituents viz 'agnet' and 'serovil'. However, there were reports that many patients developed severe addiction to it on long term use. Therefore, doctors now prescribe Medicine A to deal with the same because it contains agnet' and 'serovil'.

Which of the following can be concluded from the given statement ?

- (1) A medicine containing only serovil would not aid in treatment of the mentioned lung disease at all.
- (2) Medicine A contains no other constituent other than agnet.
- (3) Short term usage of Medicine X does not develop its addiction even to a minor extent.
- (4) Medicine X is not prescribed to treat any ailment these days.
- (5) Serovil was the constituent responsible for causing addiction of Medicine 'X'.

\$\$\$ (3-7) : Study the following information to answer the given questions.

Twelve people are sitting in two parallel rows containing six people each, in such a way that there is an equal distance between adjacent persons. In row-1 G, H, I, J, K and L are seated (but not necessarily in the same order) and all of them are facing south. In row-2 S, T, U, V, W and X are seated (but not necessarily in the same order) and all of them are facing north. Therefore, in the given seating arrangement, each member seated in a row faces another member of the other row.

The one who faces H sits third to the left of V. V does not sit at any of the extreme ends of the line. S sits second to the left of V. The one facing T sits third to the right of G. T does not



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sit any of the extreme ends of the line. Only one person sits between G and I. K is neither an immediate neighbour of I nor H. The one facing W sits second to the left of L. L does not face X.  
\$\$\$

Q3. Who amongst the following sits second to the left of the person who faces T ?

- (1) H
- (2) I
- (3) J
- (4) K
- (5) L

Q4. Which of the following is true regarding S?

- (1) Both T and W are immediate neighbours of S.
- (2) None of the given options is true.
- (3) Only one person sits between S and U.
- (4) S sits second to the right of X.
- (5) K is an immediate neighbour of the person who faces S.

Q5. Who amongst the following faces L ?

- (1) U
- (2) S
- (3) T
- (4) W
- (5) V

Q6. Which of the following groups of people represents the people sitting at extreme ends of both the rows ?

- (1) H, I, S, U
- (2) L, J, X, U
- (3) J, K, X, W
- (4) I, L, U, X
- (5) H, G, S, W

Q7. Which of the following is true with respect to the given information ?

- (1) I faces W.
- (2) None of the given options is true.
- (3) G sits exactly between J and I.
- (4) U is an immediate neighbour of W.
- (5) H faces one of the immediate neighbours of X.



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\$\$\$ (8-12) : Study the following information to answer the given questions.

When a word and number arrangement machine is given an input line of words and numbers, it arranges them following a particular rule. The following is an illustration of input and rearrangement. (All the numbers are two-digit numbers.)

**Input :** centre 24 actual 15 require impact 37 96 marine 49 unable 82

**Step I :** 24 centre actual 15 require impact 37 96 marine 49 unable 82

**Step II :** 82 24 centre actual 15 require impact 96 marine 49 37

**Step III :** 96 82 24 centre actual require impact marine 49 37 15

**Step IV :** centre 96 82 24 actual require impact marine 49 37 15 unable

**Step V :** marine centre 96 82 24 actual require 49 37 15 unable impact

**Step VI :** require marine centre 96 82 24 49 37 15 unable impact actual

Step VI is the last step of the above arrangement as the intended arrangement is obtained

As per the rules followed in the given steps, find out the appropriate steps for the given input

**Input:** embark 53 palace 16 65 salute obvious 42 achieve 71 heaven 98

\$\$\$

Q8. Which element is fourth to the right of the one which is ninth from the right end in Step III of the given input ?

- (1) 16
- (2) achieve
- (3) 53
- (4) salute
- (5) obvious

Q9. Which element comes exactly between '16' and 'salute' in step IV of the given input ?

- (1) Both obvious and heaven
- (2) Only achieve
- (3) Both embark and palace
- (4) Only 65
- (5) Only 71

Q10. If in the Vth step, '16' interchanges its position with 'obvious' and 'heaven' also interchanges its position with '65' then which element will be fifth to the right of '42' ?

- (1) 16
- (2) 65
- (3) obvious
- (4) 71
- (5) heaven

Q11. Which of the following combinations represents the first two and last two elements in step VI of the given input ?

- (1) salute, obvious, embark, palace



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- (2) heaven, salute, achieve, obvious
- (3) palace, heaven, obvious, embark
- (4) salute, palace, embark, achieve
- (5) embark, obvious, palace, achieve

Q12. In which step are the elements 'heaven 98 achieve 71' found in the same order ?

- (1) Fourth
- (2) Sixth
- (3) Fifth
- (4) Third
- (5) The given order of elements is not found in any step

\$\$\$ (13-17) : Study the following information to answer the given questions.

Eight people - P, Q, R, S, W, X, Y and Z live on eight different floors of a building but not necessarily in the same order. The lower most floor of the building is numbered one, the one above that is numbered two and so on till the topmost floor is numbered eight.

P lives on an even numbered floor above the floor numbered three. Y lives immediately below P. Only three people live between Y and R. Only two people live between R and W. There are as many people between W and P as are there between W and Q. Only two people live between Q and Z. S lives immediately above Z.

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Q13. Who amongst the following live exactly between Y and W ?

- (1) Only P
- (2) Only X
- (3) No one
- (4) Both P and X
- (5) Both X and Q

Q14. Who amongst the following lives on the floor numbered five?

- (1) X
- (2) Q
- (3) S
- (4) R
- (5) Y

Q15. As per the given arrangement, four of the following five are alike in a certain way and so form a group. Which one of the following does not belong to the group ?

- (1) Q - Two
- (2) Y - Seven
- (3) R - Five



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- (4) P - Six
- (5) Z -Three

Q16. On which of the following floor numbers does R live ?

- (1) Seven
- (2) Six
- (3) Three
- (4) Eight
- (5) Two

Q17. If X and P interchange their places and so do Z and R, then who will live between P and Z as per the new arrangement ?

- (1) Q
- (2) W
- (3) R
- (4) Y
- (5) Other than those given as options

\$\$\$ (18-23) : Study the following information to answer the questions.

Seven friends, namely P, Q, R, S, T, U and V watch seven different movies namely Spectre, Joy, Burnt, Concussion, Frozen, Everly and Legend, not necessarily in the same order, starting from Monday to Sunday (of the same week). T watches a movie on Thursday. Only one person watches movie between T and the one who watches Frozen. P watches movie immediately after the one who watches Frozen. Only three people watch movie between P and the one who watches Burnt. Only two people watch movie between the one who watches Burnt and U. The one who watches Legend watches movie before U but after Thursday. More than two people watch movie between the one who watches Legend and R. The one who watches Spectre watches movie immediately before the one who watches Everly. The one who watches concussion watches movie immediately before Q. V does not watch movie on Tuesday.

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Q18. Who amongst the following watches Joy ?

- (1) R
- (2) S
- (3) P
- (4) T
- (5) V

Q19. Four of the following five are alike in a certain way and so form a group. Which of the following does not belong to that group?

- (1) T-Tuesday



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- (2) S-Thursday
- (3) Q-Sunday
- (4) P-Friday
- (5) U-Saturday

Q20. Which of the following is true about S ?

- (1) S watches movie immediately after R.
- (2) S watches Burnt.
- (3) Only two people watch movie between S and R.
- (4) All the given statements are true.
- (5) S watches movie on Sunday.

Q21. Which of the following movies does T watch ?

- (1) Burnt
- (2) Spectre
- (3) Everly
- (4) Concussion
- (5) Legend

Q22. As per the given arrangement, Q is related to the one who watches Frozen in a certain way and R is related to the one who watches Everly in the same way. To which of the following is U related to in the same way ?

- (1) The one who watches Joy.
- (2) The one who watches concussion.
- (3) The one who watches Burnt.
- (4) The one who watches Spectre.
- (5) The one who watches Legend.

Q23. On which of the following days does V watch a movie ?

- (1) Friday
- (2) Sunday
- (3) Wednesday
- (4) Saturday
- (5) Monday

Q24. Study the following information to answer the given question.

The women of Village X are becoming financially independent after Shakti, an NGO, started assisted the women in mastering art of making organic colours thus helping them to earn a living. Which of the following statements can be inferred from the given statement ? (An



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inference is something by which you can logically deduce something to be true based on known premises.)

- (1) In order to master the art of making organic colours, one must seek the assistance of Shakti only.
- (2) Organic colours made by the women of Village X have captured the interest of people to some extent.
- (3) The women of Village X have never tried their hand at any art except colour making.
- (4) Shakti provides assistance only in the field of organic colour making and specifically to women.
- (5) Women of village X have never been assisted by any other NGO in the past.

Q25. How many such pairs of letters are there in the word 'NEUTRAL' each of which has as many letters in the word in both forward and backward directions as there are between them in English alphabetical series ?

- (1) Three
- (2) None
- (3) Two
- (4) More than three
- (5) One

Q26. Study the following information to answer the given question.

The following are two findings of an internal survey of a catering company "Mini Menu" based in City X.

A. Each year, the profit earned from the orders having multi-cuisine menu is much higher than that earned from Indian menu.

B. This year, 'Mini Menu' had 45% more orders for multi-cuisine menu as compared to any of the previous years, though the other orders remained more or less same.

Which of the following can be inferred from the given information ?

(Note: An inference is- something by which you can logically deduce something to be true based on known premises.)

- (1) The ingredients used to cook Indian foods are costlier as compared to those used in other cuisines.
- (2) This year, 'Mini Menu' earned the highest profit as compared to all the previous years of its service.
- (3) The numbers of multi-cuisine orders placed within 'Mini Menu' this year were double the number of all other orders.
- (4) Indian cuisines require much more effort than any other cuisine, thus becoming the costliest menu for parties.
- (5) This year the numbers of parties/functions held in city X were much higher as compared to any other year.



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Q27. Read the given information and answer the question.

Although school Z has started providing a number of facilities like "tree lunch for students, independent class report of each student and yearly picnics, for some years now, parents still prefer to enroll their children in school M over school Z.

Which of the following may not be a reason for the parents' preference for school M over school Z ?

- (1) School M is the only school in the city which has student friendly classrooms so that even those sitting at the last benches can clearly hear the teacher and see the board.
- (2) School M provides door to door bus service for students', while school Z provides bus service up to the nearest bus stop which may be within two kilometre of the house of the child.
- (3) Unlike school Z, school M uses audio visual aids for teaching which helps students to understand concepts better and to retain them, .
- (4) School M allows the students to give specific feedback regarding the teachers, while school Z has surprise inspection every month to assess the effectiveness of the teacher.
- (5) School M, unlike school Z, provides locker facilities to students and gives notes and homework on pen drive, to ensure that students do not have to carry heavy bags to the school every day.

Q28. If '3' is subtracted from each odd digit and '1' is added to each even digit in the number 8547692, which of the following numbers will appear twice in the new number thus formed ?

- (1) Only 2
- (2) Both 3 and 7
- (3) None
- (4) Both 3 and 5
- (5) Only 4

\$\$\$ (29-33) : In these questions, two/three statements followed by two conclusions numbered I and II have been given. You have to take the given statements to be true even if they seem to be at variance from the commonly known facts and then decide which of the given conclusions logically follows from the given statements disregarding commonly known facts.

**Give answer:**

- (1) If **only** conclusion **I** is true
- (2) If either conclusion **I** **or** **II** is true
- (3) If **only** conclusion **II** is true
- (4) If **neither** conclusion **I** **nor** **II** is true
- (5) If **both** conclusions I and II are true

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Q29. **Statements:** Some ideas are clues. Some clues are hints. No hint is a notion.

**Conclusions :** I. No idea is a hint      II. Atleast some ideas are hints.

- (1) 1



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- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q30. **Statements :** All gardens are parks. All parks are lawns. Some lawns are orchards.

**Conclusions :** I. Atleast some orchards are gardens. II. All lawns are parks.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q31. **Statements :** All gardens are parks. All parks are lawns. Some lawns are orchards.

**Conclusions:** I. All gardens are lawns. II. All orchards being parks is a possibility.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q32. **Statements :** No spice is a flavour. No flavour is a colour.

**Conclusions :** I. Atleast some spices are colours. II. All spices being colours is a possibility.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q33. **Statements:** Some ideas are clues. Some clues are hints. No hint is a notion.

**Conclusions :** I. No notion is a clue. II. Atleast some ideas are notions.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

\$\$\$ (34-38) : In these questions, statements are given followed by two sets of conclusions numbered I and II. These statements show relationship between different elements. You have to



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assume the statements to be true and then decide which of the given conclusions logically follows from the information given in the statements.

**Give answer:**

- (1) If **only** conclusion **I** is true.
- (2) If **either** conclusion **I** **or** **II** is true.
- (3) If **only** conclusion **II** is true.
- (4) If **neither** conclusion **I** **nor** **II** is true.
- (5) If **both** conclusions **I** and **II** are true.

\$\$\$

Q34. **Statements :**  $U > Y \geq W \geq K; W = X \geq Z$

**Conclusions :** I.  $U > K$  II.  $Z \leq K$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q35. **Statements :**  $G \geq H > J \leq K; H > M; J > U$

**Conclusions :** I.  $H > U$  II.  $M < G$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q36. **Statements :**  $L \leq K < J \geq U; J \leq T \leq R$

**Conclusions :** I.  $T > L$  II.  $U \leq R$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q37. **Statements:**  $P \geq Q \geq W = S \geq L; Y \leq S$

**Conclusions:** I.  $P > Y$  II.  $Y = P$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5



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Q38. **Statements:**  $G \geq H > J \leq K$ ;  $H > M$ ;  $J > U$

**Conclusions:** I.  $M < K$  II.  $K > U$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

\$\$\$ (39-43) : Study the following information to answer the given questions.

Eight friends - J, K, L, M, N, O, P and Q are sitting around a square table in such a way that four of them sit at four corners while four sit in the middle of each of the four sides. The ones who sit in middle of the sides face the centre while those who sit at the four corners face outside (i.e. opposite to the centre.)

L sits third to the right of M. M sits in middle of one of the sides of the table.

Only three people sit between L and Q. Only one person sits between Q and P.

N is one of the immediate neighbours of P.

Only three people sit between N and K.

J sits second to the right of K.

\$\$\$

Q39. How many people sit between J and P when counted from the right of P?

- (1) Two
- (2) One
- (3) None
- (4) Three
- (5) Four

Q40. Four of the following five are alike in a cerium way and so form a group. Which is the one that does not belong to that group ?

- (1) Q
- (2) O
- (3) P
- (4) L
- (5) K

Q41. Which of the following is true regarding O ?

- (1) O sits at middle of the one of the sides.
- (2) Both M and K are immediate neighbours of O.
- (3) N sits second to left of O.
- (4) Only three people sit between O and J.



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(5) None of the given options is true.

Q42. What is the position of L with respect to P ?

- (1) Second to the right
- (2) Fourth to the right
- (3) Third to the left
- (4) Fourth to the left
- (5) Second to the left

Q43. Who sits second to the left of Q ?

- (1) P
- (2) O
- (3) K
- (4) J
- (5) N

\$\$\$ (44-48) : Study the following information to answer the given questions.

In a certain code language,

'ban all animal products' is written as 'tp fm ax bz'

'animal hunting is wrong' is written as 'ke hw tp cu'

'all are wrong answers' is written as 'dy ni bz hw'

'products are well known' is written as 'fm gr sl dy'

(All codes are two-letter codes only)

\$\$\$

Q44. What does the code 'sl' stand for in the given code language ?

- (1) Hither 'well' or 'known'
- (2) products
- (3) Either 'hike' or 'people'
- (4) are
- (5) profit

Q45. What will be the possible code for 'wrong products received' in the given code language ?

- (1) tp dy gr
- (2) fm zu hw
- (3) gr fm tp
- (4) fm hw ni
- (5) ni zu fm

Q46. In the given code language, if 'busy' is coded as 'ot', then how will 'is busy hunting' be coded as ?



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- (1) cu ot hw
- (2) tp ke ot
- (3) ot hw tp
- (4) ot ke hw
- (5) ot cu ke

Q47. What will be the code for 'animal' in the given code language ?

- (1) cu
- (2) hw
- (3) tp
- (4) fm
- (5) Other than those given as options

Q48. What is the code for 'all' in the given code language ?

- (1) hw
- (2) ax
- (3) bz
- (4) ni
- (5) dy

\$\$\$ (49-50) : These questions consist of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and mark the appropriate answer.

**Give answer :**

- (1) The data **either** in statement I alone **or** statement II alone are sufficient to answer the question.
- (2) The data in **both** statements I and II are necessary to answer the question.
- (3) The data in statement **I alone** are sufficient to answer the question while the data in statement II are not sufficient to answer the question.
- (4) The data in statement **II alone** are sufficient to answer the question while the data in statement I are not sufficient to answer the question.
- (5) The data in **both** statements I and II together are **not** sufficient to answer the question.

\$\$\$

Q49. How far is point R from point T?

I. Point R is 5m to the north of point M. Point U is 4m to the east of Point R. Point T is to the west of point R such that points U, R and T form a straight line of 6m.

II. Point Z is to the south of point T. Point U is 6m to the east of point T. Point M is 2m to the east of point Z. Point R is 5m to the north of point M. Point R lies on the line formed by joining points T and U.

- (1) 1



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- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q50. How many people are standing in a straight line (Note: All are facing north) ?

I. R stands third from the left end of the line. Only one person stands between R and U. V stands second to the right of U. V stands at one of the extreme ends of the line.

II. M stands at exactly the centre of the line. Only two people stand between M and J. Only three people stand between J and U. Only one person stands between U and V.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

\$\$\$ (51-55): These questions have two blanks, each blank indicating that something has been omitted. Choose the set of words for each blank that best fits the meaning of the sentence as a whole.

\$\$\$

Q51. Couples possessing a specific gene were less bothered by the emotional \_\_\_\_\_ in their marriage as \_\_\_\_\_ to those who didn't have that gene.

- (1) upheavals, compared
- (2) traumas, against
- (3) challenges, belonged
- (4) tribulations, regards
- (5) bonding, respect

Q52. Chattisgarh was \_\_\_\_\_ the first few states in the country that \_\_\_\_\_ a ban on 'Gutkha'.

- (1) among, imposed
- (2) between, set
- (3) part, restricted
- (4) one, lifted
- (5) along, forced

Q53. Right from a young age, children should be taught about the harmful effects of smoking so that they \_\_\_\_\_ from \_\_\_\_\_ in it once they grow up.

- (1) avert, revelling
- (2) resolve, rejoicing



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- (3) refrain, indulging
- (4) abstain, taking
- (5) withdraw, addicting

Q54. Childhood obesity is a major health \_\_\_\_\_ and a leading \_\_\_\_\_ of cancer.

- (1) hazard, result
- (2) issues, reason
- (3) matter, grounds
- (4) problem, cause
- (5) phenomenon, base

Q55. A police team was \_\_\_\_\_ to \_\_\_\_\_ the case.

- (1) formed, following
- (2) constituted, investigate
- (3) located, adjudge
- (4) remanded, study
- (5) erected, probe

\$\$\$ (56-65) : Read the sentence to find out whether there is any grammatical error in it The error, if any, will be in one part of the sentence. Mark the part with the error as your answer. If there is no error, mark 'No error' as your answer. (Ignore the errors of punctuation, if any.)  
\$\$\$

Q56. Bad lipstick woes/ strike even/ the most diligent/ of makeup users.

- (1) Bad lipstick woes
- (2) strike even
- (3) the most diligent
- (4) of makeup users
- (5) No error

Q57. Our behaviour /and interest in /socialising is determined/ by our genes.

- (1) Our behaviour
- (2) and interest in
- (3) socialising is determined
- (4) by our genes
- (5) No error

Q58. With the problem of/ shortage of doctors/ plagues the entire slate,/ rural areas are the worse hit.

- (1) With the problem of



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- (2) shortage of doctors
- (3) plagues the entire state
- (4) rural areas are the worse hit
- (5) No error

Q59. While the government continues to/ promise better health care facilities/for all the residents of the State,/ rural areas remain a major cause on concern.

- (1) While the government continues to
- (2) promise better health care facilities
- (3) for all the residents of the State
- (4) rural areas remain a major cause on concern
- (5) No error

Q60. Human temperamental factors,/ which motivate people to/ form relationships and maintain them,/ are prove to have a genetic base.

- (1) Human temperamental factors.
- (2) which motivate people to.
- (3) form relationships and maintain them.
- (4) are prove to have a genetic base.
- (5) No error.

Q61. The man, who was allegedly/ stole a sum of six lakh rupees,/ was finally /arrested by the police.

- (1) The man who was allegedly
- (2) stolen a sum of six lakh rupees
- (3) was finally
- (4) arrested by the police
- (5) No error

Q62. The tobacco laced toothpaste, popular in the rural areas of the State, is considered to been the major cause behind the rising member of oral cancer cases.

- (1) The tobacco laced toothpaste
- (2) popular in the rural areas of the State
- (3) is considered to been the major cause behind
- (4) the rising member of oral cancer cases
- (5) No error

Q63. It is important to note/ that childhood cancers can be prevented/to a greatest extent' if a healthy lifestyle is followed.

- (1) It is important to note



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- (2) that childhood cancers can be prevented
- (3) to a greatest extent
- (4) if a healthy lifestyle is followed
- (5) No error

Q64. A watermelon/ is one of the healthiest fruit' to eat, if you are/ planning to go on a diet.

- (1) A watermelon
- (2) is one of the healthiest fruit
- (3) to eat, if you are
- (4) planning to go on a diet
- (5) No error

Q65. Patients can now scheduled/ appointments while at home/ and get confirmation for the same/ via email.

- (1) Patients can now scheduled
- (2) appointments while at home
- (3) and get confirmation for the same
- (4) via email
- (5) No error

\$\$\$ (66-75): Read the following passage carefully and answer the questions. Certain words/phrases are given in **bold** to help you locate them, while answering some of the questions.

In 2012, the Arctic was hot. **But** while it still matters for environmental reasons, the surge of interest in its economy has ebbed. That surge was driven by three things. First, the Arctic contains vast amounts of energy which could become accessible as the world warms and the ice retreats in summer. The US Geological Survey has said that about a quarter of the world's undiscovered oil and gas **lies** in Arctic waters. Second, the melting ice allows cargo ships to sail round Russia's northern coast for about two months in summer. This cuts the distance for ships travelling from Shanghai to Rotterdam by almost a quarter and the transit time by about two weeks. It was once said the Northern Sea Route would one day rival the Suez Canal as the best way to ship goods from East Asia to Europe. Third, the Arctic seemed a model of international co-operation. The eight countries with territory inside the Arctic Circle settled through the Arctic Council, originally a scientific forum which in 2011-13 signed its first treaties, on search and rescue missions and cleaning up oil spills. Nothing exemplified its popularity better than the rush of tropical Asian countries to join. China, India and Singapore were granted observer status in 2013.

But since mid-2014, the Arctic's allure has lessened. Its energy is pricey. Even at \$100 a barrel, many fields were marginal because the weather is so **extreme**. A Russian and Norwegian firm together developing one of the largest gasfields ever discovered, mothballed the project in 2012. With oil at \$50 a barrel, few Arctic fields would be economic. Energy exploration in the Arctic is in fact referred to by some as a licence to lose money. With regard to the Northern Sea



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Route - In 2013, 71 ships traversed Russia's Arctic, according to the Northern Sea Route Information Office: a large increase since 2010, when the number was just four. But 16,000 ships passed through the Suez Canal between Europe and Asia in 2013, so the northern route is not starting to compete. In 2014 traffic along the Northern Sea Route fell to 53 ships, only four of which sailed from Asia and docked in Europe (the rest went from one Russian port to another). The route does not yet link Europe and East Asia. The decline in 2014 was partly caused by the weather: less sea ice melted last summer than in 2013, so the route was more dangerous. But its limitations go beyond that. Cutting a week or two off transit time is not the benefit it may seem if the vessel arrives a day late. In shipping, just-in-time arrival matters, not only speed. The new-generation container ships are too cumbersome to use the Arctic so, as these become more common, the northern route becomes less attractive.

The Arctic council continues to expand: it is setting up a new economic body to boost business. But however much its members co-operate, the council cannot offset hostilities between Russia and the West-hostilities which affect the Arctic, too. Russia is stepping up its military operations there. This does not mean fighting is about to break out in the Arctic; nor are shipping and energy exploration about to end.  
\$\$\$

Q66. Which of the following can be said about the Suez Canal ?

- (1) Its shipping traffic has dramatically reduced with the opening up of the Northern Sea Route.
- (2) Russian shipping traffic through this route is increasing dramatically.
- (3) It is at present the best way to ship goods between Europe and East Asia.
- (4) New-generation cargo ships are facing challenges along this route.
- (5) Work to expand its capacity should be undertaken soon.

Q67. Which of the following is TRUE in the "context of the passage ?

- (1) Climate change has resulted in a huge increase in Arctic temperatures.
- (2) Oil and natural gas reserves in the Arctic have more or less been depleted.
- (3) Coal and natural gas are the most cost effective energy sources today.
- (4) Asian countries have been awarded the major mining rights in the Arctic.
- (5) None of the given statements is true in the context of the passage.

Q68. What does the phrase 'as a licence to lose money' convey ?

- (1) The penalties for polluting the Arctic are very heavy.
- (2) Exploring the energy in the Arctic is expensive and may not be profitable for companies,
- (3) It is very difficult to obtain requisite permissions to explore the Arctic region.
- (4) Mining for minerals in the Arctic poses risks to the health and lives of explorers.
- (5) As countries have deliberately lowered the price of oil, Russian oil companies are in financial trouble.

Q69. Choose the word which is most nearly the **SAME** in meaning to the word **LIES** given in **bold** as used in the passage ?

- (1) Rests



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- (2) Reclines
- (3) Untruths
- (4) Reality
- (5) Lazy

Q70. Which of the following is the central idea of the passage ?

- (1) The Arctic has a lot of resources and many countries are fighting over these at present.
- (2) Dialogue is the only way to achieve resolution of the conflict between Russia and the West.
- (3) The Arctic region has seen a major economic transformation thanks to its natural wealth.
- (4) The Arctic Circle is in the midst of a tremendous environmental and economic crisis.
- (5) While the potential of the arctic was hyped in the past, today there are reservations about it.

Q71. What does the author suggest regarding the Arctic council?

- (A) It should convince its members to reduce the price of oil.
  - (B) It should not be exclusive and should admit other countries as members.
  - (C) It should continue to remain purely a scientific body.
- (1) Only (A)
  - (2) Only (B) and (C)
  - (3) All (A), (B) and (C)
  - (4) Only (A) and (C)
  - (5) None of(A),(B) and (C)

Q72. Choose the word which is **OPPOSITE** in meaning to the word **EXTREME** given in bold as used in the passage.

- (1) Nearest
- (2) Minimum
- (3) Moderate
- (4) Peaceful
- (5) Insignificant

Q73. What is the author's view regarding Russia's present actions ?

- (1) It will shortly result in military conflict in the region.
- (2) It has caused closure of shipping through the Northern Sea route.
- (3) Oil and Gas projects with Norway will be suspended.
- (4) It will adversely affect the spirit of co-operation in the Arctic region.
- (5) Other than those given as options.

Q74. Which of the following is/are (a) reason/s which impact energy exploration in the Arctic ?



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- (A) High cost of exploration projects
- (B) Climatic conditions
- (C) Excessive red tape and clearances to be obtained from the Arctic Council
- (1) Only (A)
- (2) Only (B)
- (3) All (A), (B) and (C)
- (4) Only (A) and (B)
- (5) Only (B) and (C)

Q75. What do the statistics regarding the Northern Sea Route cited in the passage indicate ?

- (1) It has drastically reduced the burden on the Suez Canal
- (2) It has not been utilised to the degree anticipated
- (3) It has caused the Arctic to be severely polluted
- (4) There have been a huge number of accidents along this route
- (5) The burden on Russian ports has decreased substantially

\$\$\$ (76-85) : Which of the phrases (1), (2), (3) and (4) given below each sentence should replace the word/phrase printed in **bold** in the sentence to make it grammatically correct. If the sentence is correct as it is given and no correction is required, mark (5) as the answer.

\$\$\$

Q76. While buying a home or renting an apartment, **one of the most** sought after spaces is that of parking.

- (1) few of the much
- (2) some of much
- (3) once the most
- (4) one for the most
- (5) No correction required

Q77. Some of the best experiments **coming from** outside the chain of command.

- (1) comes of
- (2) comes from
- (3) corning for
- (4) come from
- (5) No correction required

Q78. Besides the obvious tangible benefits, the new policy will have an **immensely positively effect** on the mindsets of working women.

- (1) immensely positively affect
- (2) effective positive
- (3) immense positive affect



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- (4) immensely positive effect
- (5) No correction required

Q79. Banks will now **take control of** a company that owes its customers Rs. 9,500 crores.

- (1) take controlling of
- (2) takes control of
- (3) controlled
- (4) taking control for
- (5) No correction required

Q80. Labour markets around the world have not been able to **keep pace on** rapid shifts in the global economy,

- (1) kept pace with
- (2) keep pace with
- (3) keeping pace on
- (4) keeps pace in
- (5) No correction required

Q81. According to media, the CEO has energised the company and **build strong** foundations for its future.

- (1) built strong
- (2) strongly build
- (3) building strong
- (4) strongly building
- (5) No correction required

Q82. India now qualifies among the sixteen countries **having the longer** paid leave for new mothers.

- (1) having the long
- (2) having the longest
- (3) who has the longer
- (4) the longest
- (5) No correction required

Q83. Dr. APJ Abdul Kalam **rose from humbly** beginnings to become the country's top missile scientist and its first technocrat President.

- (1) rose from humble
- (2) rising from humble
- (3) rise of humble
- (4) risen humbly of
- (5) No correction required

Q84. To secure privacy meaningfully, some limits **have to be place on** the government's



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ability to gather information.

- (1) has to be placed on
- (2) having being placed in
- (3) have to be placed on
- (4) had placed on to
- (5) No correction required

Q85. As predicted by the IMO, monsoon is **likely too stay** strong for the next strong days.

- (1) lie to stay
- (2) likely for staying
- (3) likely to stay
- (4) liked for staying
- (5) No correction required

\$\$\$ (86-90) : Rearrange the following six sentences (A), (B), (C), (D), (E) and (F) in a proper sequence to form a meaningful paragraph, then answer the given questions.

- (A) To this affect, the Prime Minister recently appealed to the fanners to grow pulses on a part of their land.
- (B) We would rather not produce this to be deposed of crop in the first place as production takes a toll not only on the natural resources like soil and water but also impacts environment because of green house emissions.
- (C) Every year Indians spend crores of rupees from the public exchequer for preventing decay of specific food grains, but to no avail.
- (D) Alternatively, we could produce other crops like pulses, which we import very often.
- (E) But such appeals in all likelihood will go unheeded as long as distorted incentives to produce cereals- wheat and rice-continue.
- (F) We then spend a fortune again to dispose of the piled up waste.

\$\$\$

Q86. Which of the following should be the **THIRD** sentence after the rearrangement ?

- (1) A
- (2) B
- (3) F
- (4) D
- (5) E

Q87. Which of the following should be the **SIXTH (LAST)** sentence after the rearrangement ?

- (1) A
- (2) E
- (3) D
- (4) C
- (5) B



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Q88. Which of the following should be the **FIRST** sentence after the rearrangement ?

- (1) A
- (2) B
- (3) C
- (4) D
- (5) E

Q89. Which of the following should be the **FOURTH** sentence after the rearrangement ?

- (1) A
- (2) B
- (3) C
- (4) E
- (5) D

Q90. Which of the following should be the **SECOND** sentence after the rearrangement ?

- (1) A
- (2) B
- (3) C
- (4) D
- (5) F

\$\$\$ (91-100): In the given passage, there are blanks, each of which has been numbered. Against each, five words are suggested, one of which fits the blank appropriately. Find the appropriate word in each case.

...(91)... it innovation on steroids, an innovation at warp speed or just the innovation of rapid an innovation. But the essential point remains. Technology is ...(92)... innovation at its core, allowing companies to test new ideas at speeds and prices that were ...(93)... even a decade ago. They can stick features on web sites and tell within hours how customers respond.

They can see results from in-store promotions, or efforts to boost process productivity, almost as quickly. The ...(94)... ? Innovation initiatives that used to take months and megabucks to coordinate and launch can often be started in seconds, for cents.

And that makes innovation, the lifeblood of growth, more ...(95)... and cheap. Companies are able to get a much better idea of how their customers behave and what they want. This gives new offerings and marketing efforts a better shot at success. As a result, companies will also be .(96)... to try out new things because the price of failure is so much lower. That will bring big changes for corporate culture making it easier to challenge accepted wisdom, for instance and forcing managers to give more employees a ...(97)... in the innovation process. There will be even better payoffs for customers, their likes and dislikes will have much more ...(98)... on companies' decisions. In globally competitive markets, they will ultimately end up getting products and services better ...(99)... to their needs. Already, this powerful new capability is



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...(100)... the way some of the biggest companies in the world do business, inspiring new strategies and revolutionising the research-and-development process.

\$\$\$

Q91. I

- (1) Call
- (2) Says
- (3) Yell
- (4) Greet
- (5) Welcome

Q92. II

- (1) curbing
- (2) transforming
- (3) letting
- (4) remaining
- (5) acting

Q93. III

- (1) aware
- (2) fathom
- (3) unimaginable
- (4) their
- (5) curious

Q94. IV

- (1) pitfall
- (2) issue
- (3) cause
- (4) result
- (5) next

Q95. V

- (1) fragile
- (2) dynamics
- (3) efficient
- (4) skilled
- (5) inept

Q96. VI

- (1) prone
- (2) willing



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- (3) responsibly
- (4) foreword
- (5) volunteer

Q97. VII

- (1) talk
- (2) assert
- (3) say
- (4) faith
- (5) sound

Q98. VIII

- (1) affect
- (2) crush
- (3) impress
- (4) attitude
- (5) impact

Q99. IX

- (1) specifically
- (2) tailored
- (3) comfortable
- (4) order
- (5) design

Q100. X

- (1) changing
- (2) certain
- (3) paying
- (4) working
- (5) qualifying

\$\$\$ (101-105) : What approximate value will come in place of question mark (?) in the given questions ? (You are not expected to calculate the exact value)

\$\$\$

Q101.  $64.01^2 \times 65^{1/3} \times 25.99^2 \div (2^{11} \times 12.97^2) = 2^?$

- (1) 4
- (2) 5



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- (3) 2
- (4) 3
- (5) 6

Q102.  $3/10$  of 111 = ?  $\div$  (1.8 x 0.499)

- (1) 100
- (2) 10
- (3) 3
- (4) 30
- (5) 60

Q103.  $\sqrt{1024.002} \div 3.996 \div 9.98 \div 29 = ?$

- (1) 3
- (2) 9
- (3) 30
- (4) 90
- (5) 80

Q104. (24.99% of 399.995)  $\div$  ? = (125% of 4.111)<sup>2</sup>

- (1) 80
- (2) 4
- (3) 60
- (4) 16
- (5) 40

Q105.  $\sqrt{?} = (1248.28 + 51.7) \div 99.9 - 7.98$

- (1) 49
- (2) 81
- (3) 64
- (4) 16
- (5) 25

Q106. The distance between two places- A and B is 110 km. 1<sup>st</sup> car departs from place A to B, at a speed of 40 km/h at 11 a.m., 2nd car departs from place B to A at a speed of 50 km/h at 1 p.m. At what time will both the cars meet each other?

- (1) 1:50 p.m
- (2) 1:20 p.m
- (3) 2:00 p.m
- (4) 2:30 p.m



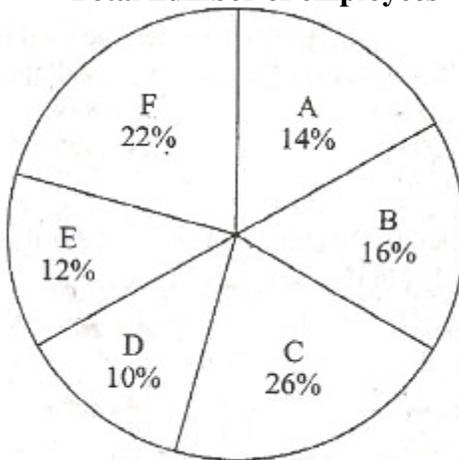
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(5) 2:15 p.m

\$\$\$ (107-112): Refer to the pie chart and answer the given questions.

**Percentage of employees in different departments of  
Branch 'XYZ' in the year 2014**  
Total number of employees =450



\$\$\$

Q107. In 2014, the number of female employees in Department C was  $\frac{5}{13}$  of the total number of employees in same department. If the number of female employees in department F was 4 less than that in department C, what is the number of male employees in department F ?

- (1) 41
- (2) 42
- (3) 58
- (4) 54
- (5) 48

Q108. In 2014, there were 25% post-graduate employees in department B. In 2015, 22 employees of the same department were shifted to. Branch 'PQR' . If in 2015, the percentage of post-graduate employees in department B became 28%, how many post-graduate employees were shifted to branch 'PQR' ?

- (1) 8
- (2) 12
- (3) 6
- (4) 4
- (5) 14

Q109. What is the average number of employees in departments A, D and F?

- (1) 65
- (2) 70
- (3) 75



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- (4) 72
- (5) 69

Q110. In department E, the respective ratio between the number of female employees and male employees was 5 : 4. There were equal number of unmarried males and unmarried females in department E. If the respective ratio between married females and married males was 3 : 2 what is the number of unmarried females ?

- (1) 6
- (2) 15
- (3) 12
- (4) 4
- (5) 8

Q111. What is the central angle corresponding to the number of employees in department E ? (in degrees)

- (1)  $43.2^\circ$
- (2)  $46.5^\circ$
- (3)  $41.6^\circ$
- (4)  $42.8^\circ$
- (5)  $45.9^\circ$

Q112. The number of employees in department E is what percent less than the number of employees in departments A and C together ?

- (1) 72%
- (2) 60%
- (3) 65%
- (4) 70%
- (5) 68%

Q113. In the year 2013, the population of a village A was 20% more than the population of village B. The population of village A in 2014 increased by 10% as compared to the previous year. If the population of village A in 2014 was 5610, what was the population of village B in 2013 ?

- (1) 4650
- (2) 5550
- (3) 4250
- (4) 5800
- (5) 4500

Q114. Five years ago, the respective ratio between the age of Omi and that of Mini was 5 : 3. Nikki is 5 years younger to Omi. Nikki is five years older to Mini. What is Nikki's present age?

- (1) 35 years



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- (2) 25 years
- (3) 20 years
- (4) 10 years
- (5) 30 years

Q115. Mohan gave 25% of a certain amount of money to Ram. From the money Ram received, he spent 20% on buying books and 35% on buying a watch. After the mentioned expenses, Ram has Rs. 2,700/- remaining. How much did Mohan have initially ?

- (1) Rs.16,000/-
- (2) Rs.15,000/-
- (3) Rs.24,000/-
- (4) Rs.27,000/-
- (5) Rs.20,000/-

\$\$\$ (116-121) : What will come in place of question mark (?) in the given number series ?  
\$\$\$

Q116. 849, 282, 93, 30, 9 ?

- (1) 1
- (2) 3
- (3) 4
- (4) 6
- (5) 2

Q117. 18, 20, 14, 26, 6, ?

- (1) 18
- (2) 26
- (3) 32
- (4) 28
- (5) 36

Q118. 12, 13, 20, 39, 82, ?

- (1) 259
- (2) 232
- (3) 210
- (4) 198
- (5) 173

Q119. 18, 18.8, 20.4, 23.6, 30, ?



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- (1) 44.4
- (2) 43.5
- (3) 49.2
- (4) 49.6
- (5) 42.6

Q120. 17, 9, 10, 16.5, 35, ?

- (1) 85
- (2) 70
- (3) 92.5
- (4) 90
- (5) 84.5

Q121. 6, 4, 5, 11, ?, 189

- (1) 82
- (2) 39
- (3) 44
- (4) 65
- (5) 96

Q122. 16 men and 10 women together can complete a project in 10 days. If 12 women can complete the project in 25 days, in how many days 10 men complete the same project ?

- (1) 28
- (2) 24
- (3) 18
- (4) 26
- (5) 10

Q123. A and B started a business with an investment of Rs. 2,800/- and Rs. 5,400/- respectively. After 4 months, C joined with Rs. 4,800/-. If the difference between C's share and A's share in the annual profit was Rs. 400/-, what was the total annual profit ?

- (1) Rs. 13,110/-
- (2) Rs. 12,540/-
- (3) Rs. 17,100/-
- (4) Rs. 11,400/-
- (5) Rs. 14,250/-

Q124. The interest earned when Rs. 'P' is invested for five years in a scheme offering 12% p.a. simple interest is more than the interest earned when the same sum (Rs.P) is invested for two years in another scheme offering 8% p.a. simple interest, by Rs.110/-. What is the value of P ?

- (1) Rs. 2,500/-



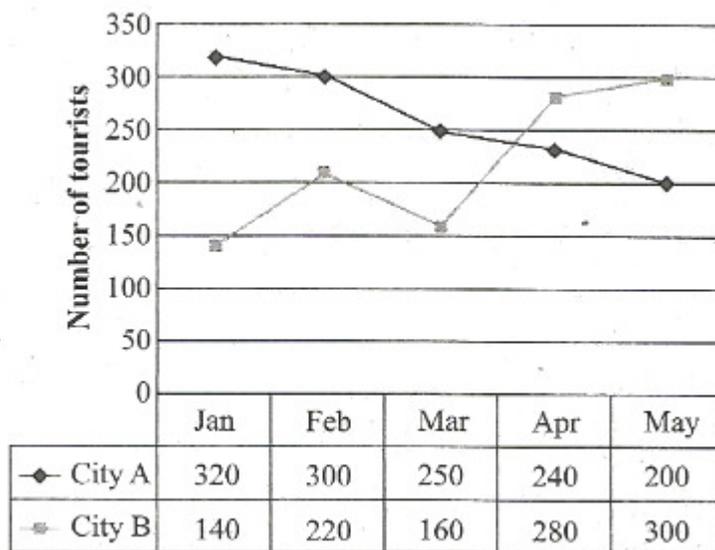
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- (2) Rs. 2,000/-
- (3) Rs.4,000/-
- (4) Rs.3,500/-
- (5) Rs. 3,000/-

\$\$\$ (125-130) : Refer to the graph and answer the given questions.

**Data (in hundreds) regarding number of tourists in two cities- A and B in five different months in the year 2005**



\$\$\$

Q125. What is the average number of tourists in city B in February and March ?

- (1) 18000
- (2) 23000
- (3) 19000
- (4) 21000
- (5) 17500

Q126. Number of tourists in city B in April are what percent more than that in city A in March ?

- (1) 20
- (2) 18
- (3) 12
- (4) 25



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(5) 8

Q127. What is the respective ratio between the total number of tourists in city A in January and February together and that in city B in the same months together ?

- (1) 25 : 11
- (2) 16 : 9
- (3) 30 : 17
- (4) 16 : 11
- (5) 31 : 18

Q128. In the month of June that year, the total number of tourists in both the cities together reduced by 40% from the previous month. What was the number of tourists in both the cities together in June ?

- (1) 32000
- (2) 40000
- (3) 20000
- (4) 42000
- (5) 30000

Q129. What is the difference between the total number of tourists in cities A and B together in May and that in March ?

- (1) 10000
- (2) 9000
- (3) 7000
- (4) 8000
- (5) 9500

Q130. The number of tourists in city A in April is what percent less than that in the same city in January ?

- (1)  $30\frac{3}{4}\%$
- (2) 20%
- (3)  $20\frac{1}{4}\%$
- (4) 30%
- (5) 25%

\$\$\$ (131-136) : Refer to the table and answer the given questions.

**Data regarding number of books sold in either hard bounds or paperback editions and also the categories of books sold in Fiction and Non-Fiction category, by four different shops, in a particular month (January 2014)**



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Book Shops	Respective ratio between hard bounds sold and number of paperbacks sold	Number of paperbacks sold out of total number of books sold	Percentage of fictions (hardbound + paperback) sold out of total books sold
A	2 : 3	600	45
B	3 : 5	450	75
C	1 : 3	450	50
D	2 : 7	1400	60

[Please note : Total books sold = Number of hardbounds sold + Number of paperbacks sold]  
\$\$\$

Q131. What is the respective ratio between the number of non-fictions sold by shop C and number of non-fictions sold by shop B ?

- (1) 10 : 2
- (2) 5 : 2
- (3) 5 : 3
- (4) 7 : 3
- (5) 7 : 4

Q132. In February 201 A, the number of paperback editions sold by shop D was 5% more than the same sold by the same shop in the previous month. The number of paperback editions sold in February 2014 by shop D constituted 75% of the total number of books sold by shop D in February 2014. What was the total number of books sold in February 2014 by shop D ?

- (1) 1840
- (2) 2040
- (3) 1960
- (4) 2080
- (5) 2400

Q133. Number of non-fictions sold by shop C is what percent of number of non-fictions sold by shop D ?

- (1) 38%
- (2)  $41 \frac{2}{3}\%$
- (3)  $45 \frac{2}{5}\%$
- (4) 60%
- (5) 31%

Q134. Total number of books sold by shop B is what percent more than sold by shop C ?

- (1) 50%



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- (2) 25 1/3%
- (3) 15 1/3%
- (4) 30%
- (5) 20%

Q135. What is the average number of fictions sold by shops A and B?

- (1) 475
- (2) 470
- (3) 495
- (4) 480
- (5) 490

Q136. Number of hardbound editions sold by shop B is what percent less than that sold by shop D ?

- (1) 30%
- (2) 36.75%
- (3) 25%
- (4) 32.5%
- (5) 40.25%

\$\$\$ (137-141) : In each of the questions below consists of a question and two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read both the statements and

**Give answer :**

- (1) If the data in statement **I alone** are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
- (2) If the data in statement **II alone** are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
- (3) If the data **either** in statement I alone **or** in statement II alone are sufficient to answer the question.
- (4) If the data given in **both** statements I and II together are **not** sufficient to answer the question.
- (5) If the data in **both** statements I and II together are necessary to answer the question.

\$\$\$

Q137. What is the area of the circular field ?

I. Area of the largest square that can be inscribed in the given circular field is  $392 \text{ cm}^2$

II. Area of the smallest square in which the given circular field can be inscribed is  $784 \text{ cm}^2$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5



# SHAKTHII ACADEMY

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Q138. What was the initial quantity of mixture of juice and water ?

I. Juice and water were in the ratio of 6 : 1 respectively in the mixture initially.

II. When 7 litre of mixture is taken out and 5 litre of water is added, the ratio between juice and water becomes 8 : 3 respectively.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q139. What is the curved surface area of the right circular cylinder ?

I. Area of the base of the cylinder is  $616 \text{ cm}^2$

II. Volume of the cylinder is  $9240 \text{ cm}^3$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q140. In how many days can 'B' alone complete the work ?

I. A, B and C together can complete the work in  $4 \frac{32}{37}$  days.

II. A and B together can complete the work in  $6 \frac{2}{3}$  days, B and C together can complete the work together in  $8 \frac{2}{11}$  days and A and C together can complete the work in  $7 \frac{1}{3}$  days.

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q141. How much money did Ms. Malini receive as retirement funds ?

I. Out of the total money received Ms. Shalini gave 25% to her husband and 10% to her daughter. Out of the remaining she invested 30% in Mutual funds, 60% in Pension fund scheme and remaining Rs. 2,60,000/-, she spent on miscellaneous items.

II. Out of the total money received Ms. Shalini invested 58.5% in various schemes, gave 35% of the total money received to her husband and daughter and remaining money she spent on miscellaneous items.

- (1) 1
- (2) 2
- (3) 3
- (4) 4



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(5) 5

Q142. The speed of a boat in still water is 16 km/h and the speed of the current is 2 km/h. The distance travelled by the boat from point A to point B downstream is 12 km more than the distance covered by the same boat from point B to point C upstream in the same time. How much time will the boat take to travel from C to B downstream ?

- (1) 3 hour
- (2) 2 hour 30 min
- (3) 3 hour 20 min
- (4) 2 hour 20 min
- (5) 2 hour

\$\$\$ (143-148) : In these questions, two equations numbered I and II are given. You have to solve both the equations and mark the appropriate option.

**Give answer:**

- (1) If  $x > y$
- (2) If  $x < y$
- (3) If  $x \geq y$
- (4) If  $x \leq y$
- (5) If  $x = y$  or  $x$  relationship cannot be established.

\$\$\$

Q143. I.  $x^2 - 6x + 9 = 0$     II.  $4y^2 - 15y + 14 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q144. I.  $2x^2 - 9x + 4 = 0$     II.  $y^2 - 14y + 40 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q145. I.  $x^2 - 10x + 25 = 0$     II.  $y^2 - 9y + 20 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5



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Q146. I.  $4x^2 - 13x + 10 = 0$  II.  $2y^2 - 15y + 22 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q147. I.  $30x^2 + 17x + 2 = 0$  II.  $3y^2 + 8y + 4 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q148. I.  $6x^2 + 11x + 3 = 0$  II.  $20y^2 + 9y + 1 = 0$

- (1) 1
- (2) 2
- (3) 3
- (4) 4
- (5) 5

Q149. Ajar has 40 litre milk. From the jar, 8 litre of milk was taken out and replaced by an equal quantity of water. If 8 litre of the newly formed mixture is taken out of the jar, what is the final quantity of milk left in the jar ?

- (1) 32.5 litre
- (2) 30 litre
- (3) 25.6 litre
- (4) 24.2 litre
- (5) 24 litre

Q150. Two mobile phones were purchased at the same price. One was sold at a profit of 20% and second was sold at a price which was Rs.1,520/- less than the price at which the first was sold. If the overall profit earned by selling both the mobile phones was 1%, what was the cost price of one mobile phone ?

- (1) Rs.6,000/-
- (2) Rs.5,200/-
- (3) Rs.4,800/-
- (4) Rs.4,000/-
- (5) Rs.5,000/-

Q151. In \_\_\_\_\_, all records contain the same data items with the same amount of space assigned to each data item.



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- (1) Finite records
- (2) Fixed length records
- (3) Indexed records
- (4) Variable length records
- (5) Uniform records

Q152. Databases are managed with \_\_\_\_\_

- (1) Roles
- (2) Hardware
- (3) Hardware and Roles
- (4) Programming
- (5) Software

Q153. Which action is used to display the context menu and the mini toolbar ?

- (1) Double-click
- (2) Move pointer
- (3) Scroll
- (4) Left-click
- (5) Right-click

Q154. The file extension for an office 2013 Word Template is \_\_\_\_\_

- (1) .doc
- (2) .docx
- (3) .dotx
- (4) .nf
- (5) .temp

Q155. TCP and UDP reside at which layer of the OSI model ?

- (1) Data link
- (2) Session
- (3) Network
- (4) Transport
- (5) Presentation

Q156. A computer containing programs that collectively serve the needs of a large group rather than that of a single user or specialized application is termed \_\_\_\_\_

- (1) Complex instruction set computer
- (2) Terminal server
- (3) Web server
- (4) Central Processing Unit
- (5) Enterprise server



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Q157. The virus that attaches itself to macros is called \_\_\_\_\_

- (1) Email virus
- (2) Micro virus
- (3) Trojan horse
- (4) Time bomb
- (5) Macro virus

Q158. Which of the following is considered a connection-oriented protocol ?

- (1) ARP
- (2) ICMP
- (3) UDP
- (4) UDP and ARP
- (5) TCP

Q159. \_\_\_\_\_ settings for each user of the database are held within the data dictionary.

- (1) View
- (2) Language
- (3) Data manipulation
- (4) Browser
- (5) Schema object

Q160. What is a MAC address in an Ethernet network ?

- (1) The address assigned by DHCP
- (2) A TCP/IP address
- (3) A logical address created by the network administrator
- (4) A logical address which is subnet specific
- (5) The physical address assigned by the NIC manufacturer

Q161. Malicious software is known as \_\_\_\_\_

- (1) Mai ware
- (2) Badware
- (3) Maliciousware
- (4) Illegalware
- (5) Disasterware

Q162. Which of the following refers to a group of terminals or workstations attached to a common control unit or server(s) that share work and may be able to back each other up if one server fails ?

- (1) Cluster
- (2) Serverless backup
- (3) Logical unit



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- (4) Attached resource computer network
- (5) Channel bank

Q163. The network database model allows each data element to have \_\_\_\_\_

- (1) Multiple parent and child records
- (2) Multiple parents records and multiple children records
- (3) Single parent record
- (4) Multiple parents records
- (5) Multiple children records

Q164. What value must a C++ destructor return ?

- (1) Destructors do not return a value
- (2) An object of the class
- (3) A status code determining whether the class was destructed correctly
- (4) A pointer or status code
- (5) A pointer to the class

Q165. When two people collaborate on an online document at the same time, they are collaborating \_\_\_\_\_

- (1) Synchronously
- (2) By Tracking
- (3) In Cloud Edit
- (4) Asynchronously
- (5) Independently

Q166. A \_\_\_\_\_ is a field that links all the data within a record to a unique value.

- (1) Cell
- (2) Attribute
- (3) Primary key
- (4) Tuple
- (5) Foreign key

Q167. The term internetworking is related to which layer of the OSI model ?

- (1) Presentation layer
- (2) Network layer
- (3) Session layer
- (4) Data link layer
- (5) Application layer

Q168. \_\_\_\_\_ provides a formal method of representing data in a conceptual form and provides the necessary means of manipulating the data held within the database.



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- (1) Domain main server
- (2) Web base model
- (3) Operating system
- (4) Database model
- (5) Client server model

Q169. Which among (he following is used to write small programs to control Unix functionalities ?

- (1) Shell Commands
- (2) C Language
- (3) Shell script
- (4) Filters
- (5) Special script

Q170. What is PPP used for ?

- (1) It is used to provided communication between two computers.
- (2) It is used to assign IP address.
- (3) It is used to send packets of data from one computer system to the other.
- (4) It is used to provide communication between two computers over a serial cable.
- (5) It is used to join two networks over a serial port.

Q171. Which class IP addresses were designed for large networks ?

- (1) B
- (2) A
- (3) D
- (4) C
- (5) E

Q172. A round button that you click to select one option from a list of options is called \_\_\_\_\_

- (1) A submit button
- (2) A radio button
- (3) A tab
- (4) A hyperlink
- (5) A checkpoint

Q173. Hierarchical databases are useful for mapping \_\_\_\_\_

- (1) Other than those given as options
- (2) One to one
- (3) Many to many
- (4) One to one and many to many
- (5) One to many



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Q174. Which of the following protocols is an example of TCP/IP data link layer protocols ?

- (1) IP
- (2) HTTP
- (3) SMTP
- (4) Ethernet
- (5) UDP

Q175. In Java, when overriding a predefined method, both the original method and the new method must have the same \_\_\_\_\_

- (1) method inheritance
- (2) method body
- (3) method signature
- (4) parameter names
- (5) method signature and inheritance

Q176. The feature that opens a window on your desktop where you can browse for file stored on your computer is called:

- (1) The Display Option
- (2) The Start page
- (3) The Control Panel
- (4) The Desktop Portal
- (5) The File Explorer

Q177. A value a Held will assume unless an explicit value is entered for that field best defines \_\_\_\_\_

- (1) designated value
- (2) normalized value
- (3) default value
- (4) replicated value
- (5) assigned value

Q178. A computer host or small network inserted as a 'neutral zone' between a company's private network and the outside public network is called \_\_\_\_\_

- (1) sheep dip computer
- (2) VPN
- (3) firewall
- (4) man in the middle
- (5) DMZ

Q179. In object-oriented databases, when your application queries for some data, what is



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returned is \_\_\_\_\_

- (1) data only
- (2) codes
- (3) output
- (4) data and code
- (5) objects and classes

Q180. Data dictionary is a tool used to centrally manage parts of a database by controlling \_\_\_\_\_ within the database.

- (1) Portion of data
- (2) Programming
- (3) Keys
- (4) Metadata
- (5) Figures

Q181. Which of the following is the least secure communications protocol ?

- (1) EAP and PAP
- (2) CHAP
- (3) EAP
- (4) IPsec
- (5) PAP

Q182. Which among the following interacts directly with system hardware ?

- (1) Applications
- (2) Kernel
- (3) Shell
- (4) Commands
- (5) Core space

Q183. Partition defined by non-overlapping ranges of values for a specified attribute best describes \_\_\_\_\_

- (1) continuous partitioning
- (2) composite partitioning
- (3) hash partitioning
- (4) range partitioning
- (5) transitive partitioning

Q184. Which method of conversion to a new system is the highest risk and the lowest cost (assuming all goes well) ?

- (1) Phased
- (2) Direct



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- (3) Parallel
- (4) Focused
- (5) Pilot

Q185. To select multiple non-contiguous folders or files to copy or move them, which key is used in Windows ?

- (1) Ctrl
- (2) Alt
- (3) Scroll Lock
- (4) Tab
- (5) Shift

Q186. One way to open the Help menu quickly is to press \_\_\_\_\_ shortcut key.

- (1) F2
- (2) F12
- (3) Windows
- (4) F6
- (5) F1

Q187. Java software was designed \_\_\_\_\_

- (1) to make writing Web pages easy for the new user.
- (2) to run on any computer or computing device regardless of its operating system.
- (3) to make software development appear complex.
- (4) as a new platform for the Internet.
- (5) to be downloaded from the Internet as required.

Q188. Which of the following is not one of the four types of database access ?

- (1) Compressed
- (2) Public
- (3) Distributed
- (4) Shared
- (5) Individual

Q189. Which of the following statements is false ?

- (1) Unix supports multiple users.
- (2) Shell takes care of inter process communication.
- (3) Unix and Linux are operating systems.
- (4) Linux is an open-source operating system and the source code is shared.
- (5) Shell provides the feature of I/O redirection.

Q190. Which of the following enables multi-tasking in UNIX ?



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- (1) Multi programming
- (2) Time sharing
- (3) Modularity
- (4) Multi-utility
- (5) Multi-user

Q191. Which is the core of the operating system ?

- (1) Script
- (2) Commands
- (3) Shell
- (4) Core space
- (5) Kernel

Q192. If every non-primary key attribute is functionally dependent on the whole primary key, then the relation is in at least \_\_\_\_\_

- (1) first normal form
- (2) third normal form
- (3) second normal form
- (4) fourth normal form
- (5) fifth normal form

Q193. A virtual relation defined by the database administrator in order to keep subjects from viewing certain data is known as :

- (1) Attribute
- (2) Cell
- (3) View
- (4) Primary- key
- (5) Data dictionary

Q194. Which of the following is the phase when everyone involves attempt to understand why the project is needed and what the scope of the project entails ?

- (1) Project development
- (2) Project documentation and standards
- (3) Project initiation
- (4) Project completion
- (5) Project proposal

Q195. What is the name for the system of hardware and software that blocks unauthorised users inside and outside the organization from entering ?

- (1) Firewall
- (2) Backbone



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- (3) Register
- (4) Gate
- (5) Choke

Q196. Which feature provides a cloud storage area where you can store files in a private and secure online location that you can access from any computer ?

- (1) SkyDrive
- (2) Wireless Drop
- (3) Network
- (4) OverDrive
- (5) Cloud Connect

Q197. The scrambling of code is known as \_\_\_\_\_

- (1) Firewalling
- (2) Deception
- (3) Password-proofing
- (4) Encryption
- (5) Permuting

Q198. Which phase of the SDLC involves acquiring any new hardware that might be required ?

- (1) Systems design
- (2) Systems development
- (3) Systems, implementation
- (4) Systems analysis
- (5) Systems maintenance

Q199. Software programs that close potential security breaches in an operating system are known as \_\_\_\_\_

- (1) refresh patches
- (2) security breach fixes
- (3) security patches
- (4) security repairs
- (5) fresh patches

Q200. \_\_\_\_\_ sets a relationship between two tables that has matching or same attribute.

- (1) Foreign key
- (2) Primary key
- (3) Schema objects
- (4) Data dictionary
- (5) Report generator



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---Answer---

A1. 4	A39. 3	A78. 4
A2. 3	A40. 5	A79. 5
A3. 5	A41. 2	A80. 1
A4. 4	A42. 1	A81. 1
A5. 1	A43. 2	A82. 2
A6. 3	A44. 1	A83. 1
A7. 5	A45. 2	A84. 3
A8. 2	A46. 5	A85. 3
A9. 3	A47. 3	A86. 2
A10. 5	A48. 3	A87. 2
A11. 4	A49. 1	A88. 3
A12. 5	A50. 1	A89. 5
A13. 3	A51. 1	A90. 5
A14. 1	A52. 1	A91. 1
A15. 2	A53. 4	A92. 2
A16. 3	A54. 4	A93. 3
A17. 1	A55. 2	A94. 4
A18. 3	A56. 5	A95. 3
A19. 5	A57. 5	A96. 2
A20. 1	A58. 4	A97. 3
A21. 4	A59. 1	A98. 5
A22. 1	A60. 4	A99. 2
A23. 3	A61. 1	A100. 1
A24. 4	A62. 3	A101. 2
A25.1	A63. 3	A102. 4
A26. 2	A64. 2	A103. 1
A27. 4	A65. 1	A104. 2
A28. 3	A66. 3	A105. 5
A29. 2	A67. 3	A106. 2
A30. 4	A68. 2	A107. 3
A31. 1	A69. 1	A108. 4
A32. 3	A70. 4	A109. 5
A32. 3	A71. 1	A110. 3
A33. 4	A72. 3	A111. 1
A34. 3	A73. 4	A112. 4
A35. 5	A74. 3	A113. 3
A36. 5	A75. 2	A114. 2
A37. 2	A76. 5	A115. 3
A38. 3	A77. 4	A116. 5



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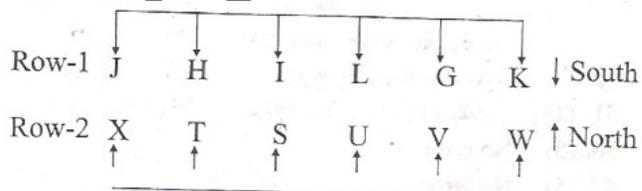
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A117. 5	A145. 3	A173. 5
A118. 5	A146. 4	A174. 4
A119. 5	A147. 1	A175. 3
A120. 4	A148. 2	A176. 5
A121. 2	A149. 3	A177. 3
A122. 2	A150. 4	A178. 5
A123. 4	A151. 2	A179. 4
A124. 1	A152. 5	A180. 4
A125. 3	A153. 5	A181. 5
A126. 3	A154. 2	A182. 2
A127. 5	A155. 4	A183. 4
A128. 2	A156. 5	A184. 2
A129. 2	A157. 5	A185. 1
A130. 5	A158. 5	A186. 5
A131. 3	A159. 1	A187. 2
A132. 3	A160. 5	A188. 1
A133. 2	A161. 1	A189. 2
A134. 5	A162. 1	A190. 2
A135. 3	A163. 1	A191. 5
A136. 4	A164. 1	A192. 3
A137. 3	A165. 3	A193.3
A138. 5	A166. 3	A194. 3
A139. 5	A167. 2	A195. 1
A140. 5	A168. 4	A196. 1
A141. 1	A169. 2	A197. 4
A142. 4	A170. 5	A198. 2
A143. 5	A171. 2	A199. 3
A144. 4	A172. 2	A 200. 2

---Answer---

---Explanation---

E3.





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E8.

Input : embark 53 palace 16 65 salute obvious 42 achieve 71 heaven 98

Step I : 16 embark 53 palace 65 salute obvious 42 achieve heaven 98 71

Step II : 42 16 embark 53 palace salute obvious achieve heaven 98 71 65

Step III : 98 42 16 embark palace salute obvious achieve heaven 71 65 53

Step IV : heaven 98 42 16 embark palace salute achieve 71 65 53 obvious

Step V : palace heaven 98 42 16 salute achieve 71 65 53 obvious embark

Step VI : salute palace heaven 98 42 16 71 65 53 obvious embark achieve

E13.

Floor	People
8	P
7	Y
6	W
5	X
4	Q
3	R
2	S
1	Z

E18.

Day	People	Movie
Monday	R	Spectre
Tuesday	'S	Everly

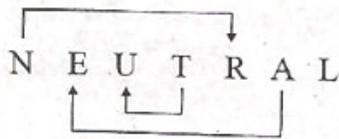


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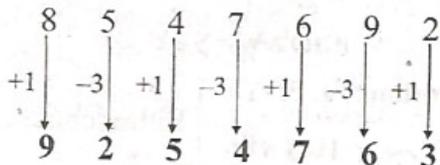
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Wednesday	V	Burnt
Thursday	T	Concussion
Friday	Q	Legend
Saturday	U	Frozen
Sunday	p	Joy

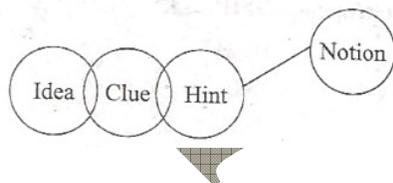
E25.



E28.



E29.

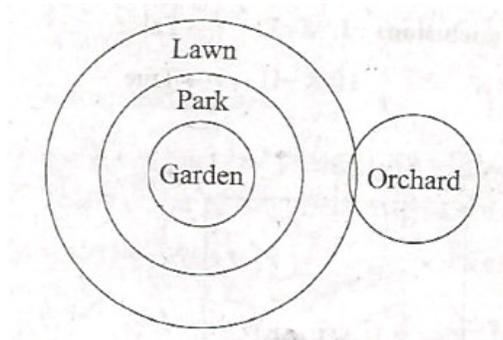


E30.



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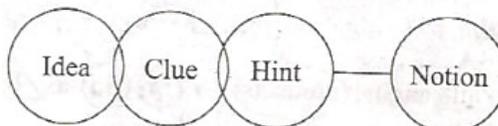
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E32.



E33.



E34. Statements :  $U > Y \geq W \leq K$

$W = X \geq Z$

$K \geq W = X \geq Z$

Conclusions : I.  $U > K \rightarrow$  False

II.  $Z \leq K \rightarrow$  True

E35. Statements :  $G > H > J \leq K$

$H > M$

$J > U$

$H > J > U$

$G \geq H > M$

Conclusions : I.  $H > U \rightarrow$  True

II.  $M < G \rightarrow$  True



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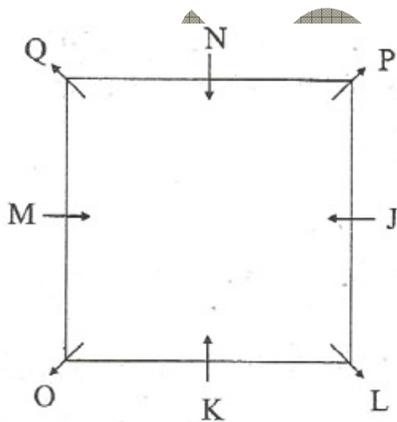
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E36. Statements:  $L \leq K < J \geq U$   
 $J \leq T \leq R$   
 $L \leq K < J \leq T$   
 $U \leq J \leq T \leq R$   
Conclusions : I.  $T > L \rightarrow$  True  
II.  $U \leq R \rightarrow$  True

E37. Statements :  $P \geq Q \geq W = S \geq L$   
 $Y \leq S$   
 $P \geq Q \geq W = S \geq Y$   
Conclusions : I.  $P > Y$   
II.  $Y = P$  Either conclusion I or II

E38. Statements :  $G \geq H > J \leq K$   
 $H > M$   
 $J > U$   
 $M < H > J \leq K$   
 $U < J \leq K$   
Conclusions : I.  $M < K \rightarrow$  False  
II.  $K > U \rightarrow$  True

E39.



E44.



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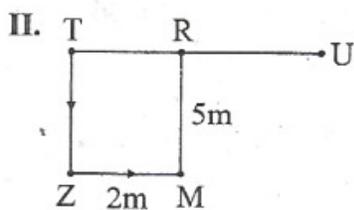
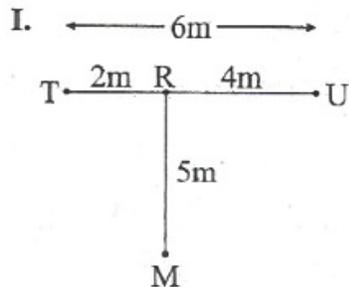
ban  $\triangle$  all animal  $\circ$  products  $\rightarrow$   $\circ$  tp  $\circ$  fm ax  $\triangle$  bz

$\circ$  animal hunting is  $\triangle$  wrong  $\rightarrow$  ke  $\triangle$  hw  $\circ$  tp cu

$\triangle$  all  $\square$  are  $\triangle$  wrong answers  $\rightarrow$   $\square$  dy ni  $\triangle$  bz  $\triangle$  hw

$\circ$  products  $\square$  are well known  $\rightarrow$   $\circ$  fm gr sl  $\square$  dy

E49.



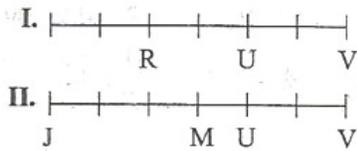
Hence, the data either in statement I alone or statement II alone are sufficient to answer the question.

E50.



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals



Hence, the data either in statement I alone or statement II alone are sufficient to answer the question.

E56. No error

E57. No error

E58. Use "worst" in place of "worse."

E59. Use "though" in place of "while"

E60. Use "proved" in place of "prove."

E61. Remove 'was" after who.

E62. Use "to be" in place of "to been."

E63. Use "great" in place of "greatest."

E64. Use "fruits" in place of "fruit."

E65. Use "scheduled" in place of "schedule."

$$E101. 64.01^2 \times 65^{1/3} \times 25.99^2 \div (2^{11} \times 12.97^2) = 2^?$$

$$64 \times 64 \times \sqrt[3]{64 \times 26 \times 26 / 2^{11}} \times 13 \times 13 = 2^?$$

$$64 \times 64 \times 4 \times 26 \times 26 / 2^{11} \times 13 \times 13 = 2^?$$

$$2^6 \times 2^6 \times 2^2 \times 2^2 / 2^{11} = 2^?$$

$$2^? = 2^{16} / 2^{11}$$

$$2^? = 2^5$$

$$\therefore ? = 5$$



# SHAKTHII ACADEMY

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E102.  $3/10$  of  $111 = ? \div (1.8 \times 0.499)$

$$3/10 \times 110 = ?/1.8 \times 0.5$$

$$33 \times 0.9 = ?$$

$$? = 29.7 \approx 30$$

E103.  $\sqrt{1024.002} \div 3.996 \div 9.98 \div 29 = ?$

$$\sqrt{1024} \div 4 \div 10 \div 30 = ?$$

$$32 \div 4 \times 3 = ?$$

$$? = 32/12$$

$$? = 2.67$$

$\therefore ? \approx 3$

E104.  $(24.99\% \text{ of } 399.995) \div ? = (125\% \text{ of } 4.111)^2$

$$(25/100 \times 400) \div ? = (125/100 \times 4)^2$$

$$100/? = 25$$

$$\therefore ? = 4$$

E105.  $\sqrt{?} = (1248.28 + 51.7) \div 99.9 - 7.98$

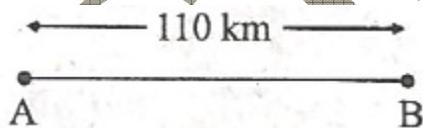
$$\sqrt{?} = (1249 + 51)/100 - 8$$

$$\sqrt{?} = 1300/100 - 8$$

$$\sqrt{?} = 13 - 8$$

$$\sqrt{?} = 5$$

$\therefore ? = 25$



E106. 1st Car                      2nd Car

Speed = 40 km/h

Speed = 50 km/h .

11 a.m.

1 p.m.

Distance travelled by 1st car till 1 p.m. = Speed x Time =  $40 \times 2 = 80$  km

Remaining distance =  $110 - 80 = 30$  km

Now, Meeting time = Distance/Relative speed =  $30/50 + 40 = 30/90$



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

$= \frac{1}{3} \times 60$   
 $= 20\text{min}$   
Total time = 2 hours 20 min  
So, at 1.20 p.m. both the cars will meet each other.

E107. Total number of employees in department C =  $450 \times \frac{26}{100} = 117$   
Number of female employees =  $117 \times \frac{5}{13} = 45$   
According to question,  
Number of female employees in department F  
 $= 45 - 4$   
 $= 41$   
Total number of employees in department F = 99  
 $\therefore$  Number of male employees in department F =  $99 - 41 = 58$

E108. Total number of employees in department B in year 2014 =  $450 \times \frac{16}{100} = 72$   
Number of post-graduate employees =  $72 \times \frac{25}{100} = 18$   
Total number of employees in department B in year 2015 =  $72 - 22 = 50$   
Number of post-graduate employees =  $50 \times \frac{28}{100} = 14$ .  
 $\therefore$  Number of shifted post-graduate employees =  $18 - 14 = 4$

E109. Total number of employees in departments A, D and F  
 $= 450 \times (14 + 10 + 22)\%$   
 $= 450 \times \frac{46}{100}$   
 $= 207$   
 $\therefore$  Required average =  $207/3 = 69$

E110. Let the number of unmarried males and female = x  
Total number of employees in department E =  $450 \times \frac{12}{100} = 54$   
Number of female employees =  $54 \times \frac{5}{9} = 30$   
Number of male employees =  $54 \times \frac{4}{9} = 24$   
According to question,  $30 - \frac{x}{24} - x = \frac{3}{2}$   
 $60 - 2x = 72 - 3x$   
 $x = 12$

E111. Required angle =  $\frac{360}{100} \times 12 = 43.2^\circ$

E112. Total number of employees in departments A and C together =  $450 \times (14 + 26)\%$   
 $= 450 \times \frac{40}{100}$   
 $= 180$



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

Total number of employees in department E =  $450 \times 12/100 = 54$

$\therefore$  Required percentage =  $180 - 54/180 \times 100 = 126/180 \times 100 = 70\%$

E113. Population of village A in 2013 =  $5610 \times 100/110 = 5100$

$\therefore$  Population of village B in 2013 =  $5100 \times 100/120 = 4250$

E114. Let Omi's present age =  $(5x + 5)$  years

Mini's present age =  $(3x + 5)$  years

According to question,

$$5x + 5 - 5 = 3x + 5 + 5$$

$$5x = 3x + 10$$

$$2x = 10$$

$$x = 5 \text{ years}$$

$\therefore$  Nikki's present age =  $3x + 10 = 3 \times 5 + 10 = 25$  years

E115. Let the initial amount of Mohan = Rs x

Amount received by Ram =  $x/1 \times 25/100 = x/4$

Amount spent on books and watch =  $x/4 (20 + 35)\%$   
 $= x/4 \times 55/100 = 11x/80$

Remaining amount =  $x/4 - 11/80x = 9/80x$

According to question,  $9/80x = 2700$

$x = \text{Rs } 24,000/-$

E116.

$$\begin{array}{cccccc} 849 & 282 & 93 & 30 & 9 & 2 \\ \downarrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ \downarrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ +3-1 & +3-1 & +3-1 & +3-1 & +3-1 & \end{array}$$

E117.

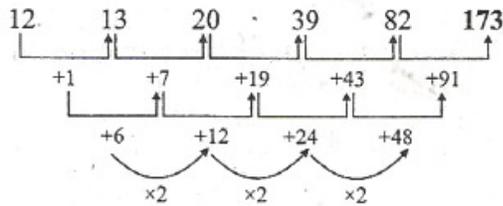
$$\begin{array}{cccccc} 18 & 20 & 14 & 26 & 6 & 36 \\ \downarrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ \downarrow & \uparrow & \uparrow & \uparrow & \uparrow & \uparrow \\ +(1+1^2) & -(2+2^2) & +(3+3^2) & -(4+4^2) & +(5+5^2) & \end{array}$$

E118.

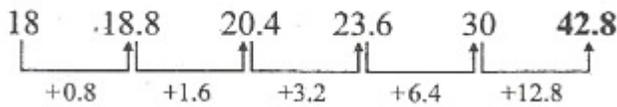


# SHAKTHII ACADEMY

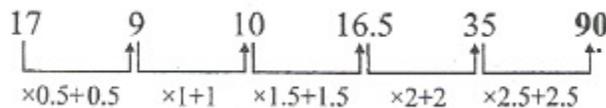
Increasing Confidence ; Reaching Goals



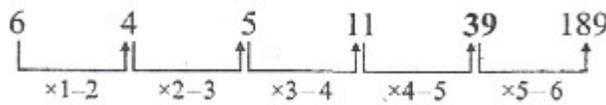
E119.



E120.



E121.



E122. Let the work will be completed in  $x$  days.

According to question,

$$(16M + 10W) \times 10 = 12W \times 25$$

$$160M + 100W = 300W$$

$$160M = 200W$$

$$4M = 5W$$

$$\therefore 10 \text{ Men} = 50/4 \text{ Women}$$

Again, according to question,

$$25 \times 12 = 50/4 \times x$$

$$x = 24 \text{ days}$$

$$\begin{aligned} \text{E123. Ratio of profit of A, B and C} &= (2800 \times 12) : (5400 \times 12) : (4800 \times 8) \\ &= 14:27:16 \end{aligned}$$



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

According to question,

$$16x - 14x = 400$$

$$2x = 400$$

$$x = 20$$

$$\therefore \text{Total profit} = (14 + 27 + 16) x$$

$$= 57x$$

$$= 57 \times 20$$

$$= \text{Rs } 11,400/-$$

E124. According to question

$$P \times 5 \times 12/100 - P \times 2 \times 8/100 = 1100$$

$$60P - 16P = 110000$$

$$44P = 110000$$

$$P = 10000/4$$

$$P = \text{Rs } 2,500/-$$

E125. Required average =  $[220 + 160/2]$  hundreds

$$= 190 \text{ hundreds}$$

$$= 19000$$

E126. Required percentage =  $280 - 250/250 \times 100$

$$= 30/250 \times 100$$

$$= 12\%$$

E127. Required ratio =  $(300 + 320)/(140 + 220)$

$$= 620/360$$

$$= 31:18$$

E128. Required number =  $[500 \times 80/100]$  hundreds = 40000

E129. Required difference =  $[(200 + 300) - (250 + 160)] \times 100 = 9000$

E130. Required percentage =  $(320 - 240/320) \times 100$

$$= 80/320 \times 100$$

$$= 25\%$$



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

Book shop	Total number of books	Number of paper back books	Number of hard bound books	Number of fiction books	Number of Non-fictionbooks
A	$600 \times \frac{5}{3} = 1000$	600	$1000 - 600 = 400$	$1000 \times \frac{45}{100} = 450$	$1000 - 450 = 550$
B	$450 \times \frac{8}{5} = 720$	450	$720 - 450 = 270$	$720 \times \frac{75}{100} = 540$	$720 - 540 = 180$
C	$450 \times \frac{4}{3} = 600$	450	$600 - 450 = 150$	$600 \times \frac{50}{100} = 300$	$600 - 300 = 300$
D	$1400 \times \frac{9}{7} = 1800$	1400	$1800 - 1400 = 400$	$1800 \times \frac{60}{100} = 1080$	$1800 - 1080 = 720$

E131. Required ratio =  $\frac{300}{180} = 5 : 3$

E132. Number of paperback editions sold by shop D February 2014

$$= 1400 \times \frac{105}{100} = 1470$$

Let the total number of books sold by shop D in February 2014 = x

According to question,

$$X \times \frac{75}{100} = 1470$$

$$x = 1470 \times \frac{100}{75}$$

$$x = 1960$$

E133. Required percentage =  $\frac{300}{720} \times 100$

$$= \frac{125}{3} = 41 \frac{2}{3}\%$$

E134. Required percentage =  $\frac{720 - 600}{600} \times 100 = \frac{120}{6} = 20\%$

E135. Required average =  $\frac{450 + 540}{2} = \frac{990}{2} = 495$

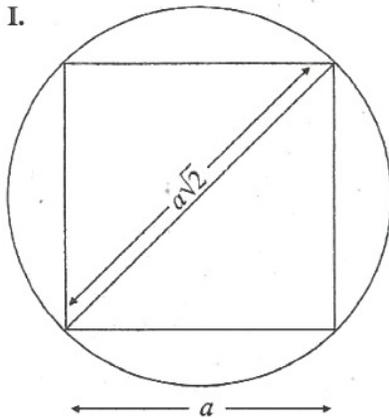
E136. Required percentage =  $\frac{400 - 270}{400} \times 100 = \frac{130}{4} = 32.5\%$



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

I.



E137. Let the side of the square =  $a$  cm

According to statement,

$$a^2 = 392 \text{ cm}^2$$

$$a = 19.79 \text{ cm}$$

Diagonal of the square =  $a\sqrt{2} = 19.79 \sqrt{2}$  cm

Radius of the circle = Diagonal/2

$$= 19.79 \times \sqrt{2}/2$$

$$= 13.99 \approx 14 \text{ cm}$$

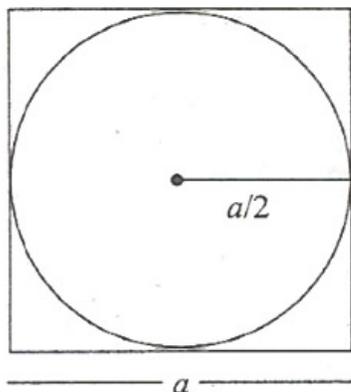
$\therefore$  Area of the circle =  $\pi r^2$

$$= 22/7 \times (14)^2$$

$$= 22 \times 14 \times 14/7$$

$$= 616 \text{ cm}^2$$

II.



II. Let the side of the square =  $a$  cm

and the radius of the circle =  $a/2$  cm



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

According to statement,

$$a^2 = 784 \text{ cm}^2$$

$$a = 28 \text{ cm}$$

$$\therefore \text{Area of the circle} = \pi(a/2)^2$$

$$= 22/7 \times 14 \times 14 = 616 \text{ cm}^2$$

Hence, the data either in statement I alone or in statement II alone are sufficient to answer the question.

E138. Let the initial quantity of the mixture =  $7x$  litre

I. Quantity of juice =  $6x$

Quantity of water =  $x$

II. According to statement,

$$6x - 7 \times 6/7 / x - 7 \times 1/7 + 5 = 8/3$$

$$18x - 18 = 8x + 32$$

$$10x = 50$$

$$x = 5 \text{ litre}$$

$$\therefore \text{Initial quantity of the mixture} = 7x = 7 \times 5 = 35 \text{ litre}$$

Hence, the data in both the statements I and II together are necessary to answer the question.

E139. I. Given,

$$\pi r^2 = 616 \text{ cm}^2$$

$$22/7 \times r^2 = 616$$

$$r^2 = 616 \times 7/22$$

$$r = 14 \text{ cm}$$

II. Given,  $\pi r^2 h = 9240$

$$22/7 \times 14 \times 14 \times h = 9240$$

$$h = 420/28$$

$$h = 15 \text{ cm}$$

Now, curved surface area of the cylinder =  $2\pi rh$

$$= 2 \times 22/7 \times 14 \times 15 = 1320 \text{ cm}^2$$

Hence, the data in both statements I and II together are necessary to answer the question.

E140. I.  $(A+B+C)$ 's 1 day's work =  $37/180$

II.  $(A+C)$ 's 1 day's work =  $3/22$

$$(A+B+C)\text{'s 1 day's work} - (A+C)\text{'s 1 day's work} = 37/180 - 3/22$$

$$(A + B + C - A - C)\text{'s 1 day's work} = 814 - 540/180 \times 22$$

$$B\text{'s 1 day's work} = 274/180 \times 22$$

$$B\text{'s 1 day's work} = 137/1980$$

$$\therefore B \text{ can complete the work} = 1980/37 = 53 \frac{19}{37} \text{ days}$$

Hence, the data in both statements I and II together are necessary to answer the question.

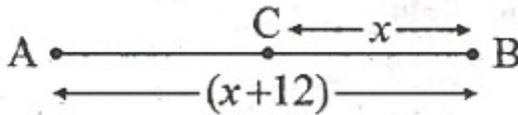


# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

E141. I. Let Ms. Malini received as retirement funds = Rs .x  
Amount given to her husband and daughter =  $x \times \frac{35}{100} = \frac{7}{20}x$   
Remaining amount =  $x - \frac{7x}{20} = \frac{13}{20}x$   
Amount invested from remaining amount =  $\frac{13x}{20} \times \frac{90}{100} = \frac{117}{200}x$   
Final remaining amount =  $\frac{13x}{20} - \frac{117}{200}x$   
 $= \frac{130x}{200} - \frac{117x}{200}$   
 $= \frac{13x}{200}$   
Now, according to statement,  $\frac{13x}{200} = 260000$   
 $x = \text{Rs } 40,00,000/-$

E142. Downstream speed of boat =  $(16 + 2) = 18\text{km/h}$   
Upstream speed of boat =  $(16 - 2) = 14\text{km/h}$   
Let BC = x km  
and AB =  $(x + 12)$  km



According to question,  
 $\frac{x + 12}{18} = \frac{x}{14}$   
 $14x + 168 = 18x$   
 $4x = 168$   
 $x = 42\text{km}$   
Time taken to travel 42 km downstream  
 $= \frac{42}{18} = \frac{7}{3}$   
 $= 2 \text{ hour } 20 \text{ min}$

E143. I.  $x^2 - 6x + 9 = 0$   
 $x^2 - 3x - 3x + 9 = 0$   
 $(x - 3)^2 = 0$   
 $x = 3$

II.  $4y^2 - 15y + 14 = 0$   
 $4y^2 - 8y - 7y + 14 = 0$   
 $4y(y - 8) - 7(y - 8) = 0$   
 $(y - 8)(4y - 7) = 0$   
 $y = 8, \frac{7}{4}$

$\therefore$  Relationship between x and y cannot be determined.

E144. I.  $2x^2 - 9x + 4 = 0$



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

$$\begin{aligned}2x^2 - 8x - x + 4 &= 0 \\2x(x - 4) - 1(x - 4) &= 0 \\(x - 4)(2x - 1) &= 0 \\x &= 4, 1/2\end{aligned}$$

$$\begin{aligned}\text{II. } y^2 - 14y + 40 &= 0 \\y^2 - 10y - 4y + 40 &= 0 \\y(y - 10) - 4(y - 10) &= 0 \\(y - 4)(y - 10) &= 0 \\y &= 4, 10 \\ \therefore x &\leq y\end{aligned}$$

$$\begin{aligned}\text{E145. I. } x^2 - 10x + 25 &= 0 \\x^2 - 5x - 5x + 25 &= 0 \\x(x - 5) - 5(x - 5) &= 0 \\(x - 5)^2 &= 0 \\x &= 5\end{aligned}$$

$$\begin{aligned}\text{II. } y^2 - 9y + 20 &= 0 \\y^2 - 4y - 5y + 20 &= 0 \\y(y - 4) - 5(y - 4) &= 0 \\(y - 4)(y - 5) &= 0 \\y &= 4, 5 \\ \therefore x &\geq y\end{aligned}$$

$$\begin{aligned}\text{E146. I. } 4x^2 - 13x + 10 &= 0 \\4x^2 - 8x - 5x + 10 &= 0 \\4x(x - 2) - 5(x - 2) &= 0 \\(x - 2)(4x - 5) &= 0 \\x &= 2, 5/4\end{aligned}$$

$$\begin{aligned}\text{II. } 2y^2 - 15y + 22 &= 0 \\2y^2 - 4y - 11y + 22 &= 0 \\2y(y - 2) - 11(y - 2) &= 0 \\(y - 2)(2y - 11) &= 0 \\y &= 2, 11/2 \\ \therefore x &\leq y\end{aligned}$$

$$\text{E147. I. } 30x^2 + 17x + 2 = 0$$



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

$$30x^2 + 5x + 12x + 2 = 0$$
$$5x(6x + 1) + 2(6x + 1) = 0$$
$$(5x + 2)(6x + 1) = 0$$
$$x = -2/5, -1/6$$

$$\text{II. } 3y^2 + 8y + 4 = 0$$
$$3y^2 + 6y + 2y + 4 = 0$$
$$3y(y + 2) + 2(y + 2) = 0$$
$$(y + 2)(3y + 2) = 0$$
$$y = -2, -2/3$$
$$\therefore x > y$$

$$\text{E148. I. } 6x^2 + 11x + 3 = 0$$
$$6x^2 + 2x + 9x + 3 = 0$$
$$2x(3x + 1) + 3(3x + 1) = 0$$
$$(3x + 1)(2x + 3) = 0$$
$$x = -1/3, -3/2$$

$$\text{II. } 20y^2 + 9y + 1 = 0$$
$$20y^2 + 5y + 4y + 1 = 0$$
$$5y(4y + 1) + 1(4y + 1) = 0$$
$$(4y + 1)(5y + 1) = 0$$
$$y = -1/4, -1/5$$
$$\therefore x < y$$

$$\text{E149. Final quantity in the jar} = 40 \times (1 - 8/40)^2$$
$$= 40 \times 4/5 \times 4/5$$
$$= 25.6 \text{ litre}$$

E150. Let the cost price of one mobile = Rs x  
According to question,

$$X \times 120/100 + (X \times 120/100 - 1520) = 2X \times 101/100$$
$$6x/5 + 6x/5 - 1520 = 202/100x$$
$$12x/5 - 202x/100 = 1520$$
$$38/100x = 1520$$
$$X = \text{Rs } 4,000/-$$

---Explanation---



# SHAKTHII ACADEMY

Increasing Confidence ; Reaching Goals

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