
COMPUTER ABILITY

1. When you first turn on a computer, the COU is preset to execute instructions stored in
 - (1) RAM
 - (2) Flash memory
 - (3) ROM
 - (4) CD-ROM
 - (5) ALU

Solution:3

2. Which of the following is not a function of the control unit?
 - (1) Read instructions
 - (2) Interpret instructions
 - (3) Execute instructions
 - (4) Direct operations
 - (5) Provide control signals

Solution:

3. What are .bas, .doc, .htm examples of in computing?
 - (1) Extensions
 - (2) Protocols
 - (3) Databases
 - (4) Other than those given as options
 - (5) Domains

Solution:3

4. Documents converted to..... can be published to the web.
 - (1) a doc file
 - (2) http
 - (3) Other than those given as options
 - (4) machine language
 - (5) HTML

Solution:5

5. What kind of software would you most likely use to keep track of a billing account?
- (1) Web authoring
 - (2) electronic publishing
 - (3) spreadsheet
 - (4) word processing
 - (5) Power point

Solution:3

6. A computer virus normally attaches itself to another computer program known as a
- (1) host program
 - (2) target program
 - (3) backdoor program
 - (4) Bluetooth
 - (5) Trojan horse

Solution:1

7. When a file contains instructions that can be carried out by the computer. It is often called a(n)..... file.
- (1) Other than those given as options
 - (2) information
 - (3) application
 - (4) executable
 - (5) data

Solution:4

8. Data duplication wastes the space, but also promotes a more serious problem called
- (1) Isolated data
 - (2) Data inconsistency
 - (3) Other than those given as options
 - (4) Program dependency
 - (5) Separated data

Solution:2

9. Which of the following is not a version of the Windows operating system software for the PC?
- (1) ME
 - (2) 98
 - (3) XP

(4) Linux

(5) 95

Solution:4

10. The main directory of a disk is called thedirectory.

(1) network

(2) folder

(3) root

(4) Other than those given as options

(5) Home

Solution:3

11. Which of the following is not an example of application software?

(1) Word processing software

(2) Spreadsheet software

(3) Operating system software

(4) Database software

(5) Graphics software

Solution:3

12. Which of the following is not true about RAM?

(1) RAM is the same as hard disk storage

(2) RAM is a temporary storage area

(3) RAM is volatile

(4) RAM is a primary memory

(5) Other than those given as options

Solution:1

13. The data storage hierarchy consists of

(1) Bits, Bytes, Records, Fields, files and databases

(2) Characters, fields, records, files and databases

(3) Bytes, bits, fields, records, files and databases

(4) Bits, bytes, fields, records, files and databases

(5) Other than those given as options

Solution:4

14. = Sum (B1 BO) is an example of a

(1) function

(2) cell address

(3) formula

- (4) value
- (5) Other than those given as options

Solution:1

15. are often delivered to a PC through an email attachment and are often designed to do harm.

- (1) Portals
- (2) Spam
- (3) Viruses
- (4) Other than those given as options
- (5) E-mail messages

Solution:3

16. Decreasing the amount of space required to store data and programs is accomplished by

- (1) Crashing
- (2) Disk caching
- (3) RAID
- (4) file compression
- (5) Other than those given as options

Solution:4

17. What is the difference between a CD-ROM and CD-RW?

- (1) They are the same – just two different terms used by different manufacturers
- (2) A CD-Rom can be written to and a CD-RW cannot
- (3) Other than those given as options
- (4) A CD-ROM holds more information than a CD-RW
- (5) A CD-RW can be written to but a CD-ROM can only be read from

Solution:5

18. Computer program are written in a high-level programming language, however, the human readable version of a program is called

- (1) Cache
- (2) instruction set
- (3) source code
- (4) Word size
- (5) Other those than given as options

Solution:3

19. The clock rate of a processor is measured in

- (1) megabytes or gigabytes
- (2) milliseconds
- (3) megahertz or gigahertz
- (4) nanoseconds
- (5) micro hertz

Solution:3

20. When cutting and pasting, the item cut is temporarily stored in the

- (1) dashboard
- (2) ROM
- (3) hard drive
- (4) Diskette
- (5) clipboard

Solution:5

ENGLISH LANGUAGE

Direction (1-5) : *In the given sentences there are two blank spaces. Below each sentence five pairs of words have been given. Find out which pair of words can be filled up in the blanks in the sentence in the same sequence to make the sentence meaningfully complete.*

1. The incident has..... severe damage to theof the employees.
- (1) resulted – optimism
 - (2) led – emotions
 - (3) produced conduct
 - (4) contributed – integrity
 - (5) caused – morale

Solution:5

2.investing in technology, the company has been to compete globally.
- (1) For – trying
 - (2) Despite – gradual
 - (3) While – clear
 - (4) Since – enable
 - (5) By – able

Solution:5

3. The root..... of slow reduction in poverty is..... of investment in agriculture.
- (1) purpose – increase
 - (2) reason – hike
 - (3) cause – lack
 - (4) effect – incidence
 - (5) consequence – plunge

Solution:3

4. You have unfairly..... his success to the fact that he is well.....
- (1) reduced – behaved
 - (2) doubted – adjusted
 - (3) excludused – educated

(4) attributed — connected

(5) rated — known

Solution:4

5. To..... the problems of the region it is..... to interact with the local people,

(1) discover — necessity

(2) understand — essential

(3) research,— advice

(4) manage — needful

(5) focus — better

Solution:2

Directions (6-10) : *In the following questions, read this sentences to find out whether there is any error in it. The error, if any, will be in one part of the sentence. That part is the answer. If there is no error, Select 'No error as the answer, (ignore the error of punctuation, if any)*

6. Santosh succeed/ due to the encouragement/ of friends, relatives/ and well-wishers.

(1) Santosh succeed

(2) due to the encouragement

(3) of friends, relatives

(4) and well-wishers

(5) No error

Solution:1

7. One of the foremost/ challenges faced by/ the company is that of/ attracting and retaining talent.

(1) One of the foremost

(2) challenges faced by

(3) the company is that of

(4) attracting and retaining talent

(5) No error

Solution:5

8. We aren't bothered/ as long as/ they don't interfere/ with ours freedom.

(1) We aren't bothered

(2) as long as

- (3) they don't interfere
- (4) with ours freedom
- (5) No error

Solution:4

9. The two-part documentary/ is a critique of the education system/and its impacting/on up, liftment of women.

- (1) The two-part documentary
- (2) is a critique of the education system
- (3) and its impacting
- (4) on upliftment of women,
- (5) No error

Solution:3

10. All the Airlines is/ using the increased awareness/ about security to impose a new/ code of conduct among passengers.

- (1) All the Airlines is
- (2) using the increased awareness
- (3) about security to impose a new
- (4) code of conduct among passengers
- (5) No error

Solution:1

Directions (11-15) : *In the given sentences, one word has been given in **bold**. Below each sentence five words are suggested, one of which can replace the word given in **bold** without changing the meaning of the sentence. Find out the appropriate word in the given sentence.*

11. The content of this passage **relates** to the Mughal period.

- (1) depicts
- (2) shows
- (3) seems
- (4) happens
- (5) pertains

Solution:5

12. Nilima's husband **compelled** her to give up her job.

- (1) cautioned
- (2) forced

- (3) protected
- (4) restructured
- (5) continued

Solution:2

13. Rahul played well to third **rank** in the competition.

- (1) finish
- (2) find
- (3) number
- (4) establish
- (5) get

Solution:3

14. It was **evident** that the gold ring was stolen by the domestic servant.

- (1) unknown
- (2) reveal
- (3) agreed
- (4) clear
- (5) proof

Solution:4

15. The sad tale narrated by the distressed woman affected everyone.

- (1) contacted
- (2) realised
- (3) touched
- (4) surprised
- (5) cautioned

Solution:3

Direction (16-25) : Read the following passage carefully and answer the questions given below it. Certain words are given in bold in the passage to help you to locate them while answering some of the questions.

By the mid-nineteenth century, the educated Indian had become sufficiently aware of both his rich historical heritage and the **abject** state of his current existence. Nostalgia and a sense of racial identity grew as Indians gradually perceived the oppressiveness of alien rule. In the early nineteenth century, Orientalist scholars associated with the Fort William College, Kolkata helped considerably to unearth several obscure Indian texts and traditions, thereby, also

creating a new awareness and sensitivity among Indians about their cultural heritage.

In the first half of the nineteenth century, particularly in some parts of the country, patriotism was not grossly inconsistent with an undisguised support for the continuation of British rule. Writers of his period from this part of the country made repeated references to how the British had ‘rescued’ India from many centuries of ‘tyrannical’ and ‘unprogressive’ governance of earlier rulers. Many people of this time, in fact, made, an important distinction between the pragmatic gains to be made from a short-term **tutelage** under British rule and a long-term objective of securing independence from it. Through such thoughts ultimately proved to be **naive** and over-optimistic, in the 1820s and 1830s the advantages of British rule seemed to outweigh its disadvantages. In a letter written in 1823 to Governor General Lord Amherst, an Indian social reformer Raja Rammohan Roy (1774-1833) opposed an official move to open a Sanskrit College on the ground that it would produce no positive or progressive influence on the educated Hindu. I le felt rather than indulge in abstract metaphysical speculation as was likely to be the result of a purely Sanskritic education, Indians would profit far more by imbibing the best of modern European civilization-pragmatism and a rational, scientific outlook. Social usefulness more than anything else, was now to be the true measure of things. In fact, his emphasis on rationality and a coimmon sense approach to religion led some of his friends and admirers to call him a ‘religious utilitarian’.

16. According to the passage, what was the contribution of early nineteenth century Orientalist scholars?
- (1) Pointing out deficiencies in the study of Sanskrit
 - (2) Criticising the study of Indian texts and traditions
 - (3) Encouraging students to get admission in Fort William College
 - (4) Creating awareness and sensitivity about British culture
 - (5) Making Indians adequately nostalgic

Solution:5

17. Choose the word which is most opposite in meaning to the word “**naive**” as used in the passage.
- (1) abstract
 - (2) speculative
 - (3) hypothetical
 - (4) wise
 - (5) lasting

Solution:4

18. In the first half of the nineteenth century, writers from some parts of the country –
- (1) started appreciating the work of Raja Rammohan Roy.
 - (2) appreciated the British rule from rescuing India from the way it was ruled by previous rulers.
 - (3) proclaimed themselves as patriotic writers who could save India from cultural aggression.
 - (4) realised the importance of careful and systematic study of ancient Indian texts.
 - (5) provided tacit but strong support to the liberation movement.

Solution:2

19. Which awareness had dawned on Indians by the mid-nineteenth century?
- (1) The long-term advantages of british rule
 - (2) Rationalistic attitude towards living.
 - (3) Rich historical heritage
- (1) Only (1).
(2) Only (2)
(3) Only (1) and (2)
(4) Only (2) and (3)
(5) Only (3)

Solution:5

20. According to the passage what did Raja Rammohan Roy feel about pure Sanskrit education?
- (1) It would imbibe the best of spiritual Indian civilization.
 - (2) It would create awareness of our true cultural heritage.
 - (3) It would generate nostalgia and strong racial identity.
 - (4) It would help enhance patriotism among people,
 - (5) It would spread abstract metaphysical education.

Solution:5

21. Choose the word which is the most OPPOSITE in meaning to the word “**abject**” as used in the passage,
- (1) negative
 - (2) exalted
 - (3) absolute
 - (4) scarce
 - (5) virtual

Solution:2

22. Which thoughts, according to the passage, proved imprudent and over-optimistic?
- (1) It was better for India to have British rule in the short-term.
 - (2) Making a distinction between short-term and longterm objectives.
 - (3) The ideal of patriotism and independence among Indians.
 - (4) Indians would profit more by Sanskrit education.
 - (5) Racial identity is crucial for

Solution:1

23. political independence. According to the passage which of the following was opposed by Raja Rammohan Roy?
- (1) The tradition of 'Sat' and child marriage.
 - (2) Interference of Indians in governance.
 - (3) Official move to open a Sanskrit language.
 - (4) Orientalist scholars joining Fort William College.
 - (5) Rapid growth of English as a principal medium of instruction.

Solution:3

24. According to the passage, which factor brought a sense of racial identity among the Indians?
- (1) Increasing understanding of the Indian education system.
 - (2) Economic equality among the people.
 - (3) Growing harshness of the British rule.
 - (4) Regional imbalance between India and its neighbours.
 - (5) Growing religious fundamentalism among the people.

Solution:3

25. Choose the word which is similar in meaning as the word "**tutelage**" used in the passage?
- (1) protection
 - (2) measure
 - (3) planning
 - (4) contribution
 - (5) strategy

Solution:1

Directions (26-30) : *In the following questions, which of the phrases given below should replace the phrase given in **bold** in each sentence to make the sentence grammatically meaningful and correct? If the sentence is correct as it is and no correction is required, Select 'No correction required' as your answer.*

26. According to our analysis, allocation for the agriculture sector **being high from** last year.

- (1) is as high
- (2) is higher than
- (3) was higher to
- (4) can be high
- (5) No correction required

Solution:2

27. He did not invest wisely and has lost his **entirely life savings**.

- (1) entire life savings
- (2) live savings entirely
- (3) savings for entire life
- (4) entire lifetime of savings
- (5) No correction required

Solution:1

28. It would be worthwhile to educate teenagers about the consequences of **drinking to drive**.

- (1) drunk for driving
- (2) drunk and driving
- (3) drink to drive
- (4) drinking and driving
- (5) No correction required

Solution:4

29. Hearing rumourst of a fraud, investors **began to pull** out their money in panic.

- (1) beginning pulling out
- (2) began putting in
- (3) will begin by putting
- (4) began to pull out
- (5) No correction required

Solution:4

30. There are a large number of employees **whom took** the option of voluntary retirement.

- (1) who is taken
- (2) which taken
- (3) who took
- (4) that will be taken

(5) No correction required

Solution:3

Directions (31-40) : *In the given passage, there are blanks, each of which has been numbered. Against each number, five words are suggested, one of which fits the blank appropriately. Find out the appropriate word in each case.*

Schools all over India **(31)** ‘Children’s Day’ on 14th November every year. It was this day that our **(32)** first Prime Minister was **(33)**. His **(34)** had come down from Kashmir to rich plains below. Kaul had been his **(35)** name. This changed to Kaul Nehru, and in **(36)** years. Kaul was **(37)** and he became simple Nehru. Jawaharlal Nehru was the **(38)** son of his prosperous parents. And so he grew up and spent his early years as a **(39)** child with no **(40)** of his age.

31. (1) consider
(2) regard
(3) celebrate
(4) enjoy
(5) respect

Solution:3

32. (1) great
(2) only
(3) formerly
(4) importantly
(5) arrogant

Solution:1

33. (1) chose
(2) rejected
(3) decided
(4) selected
(5) born

Solution:5

34. (1) descendant
(2) ancestors
(3) following
(4) colleague
(5) off-spring

Solution:2

35. (1) false
(2) nick
(3) family
(4) oldest
(5) first

Solution:3

36. (1) many
(2) after
(3) later
(4) starting
(5) subsequently

Solution:3

37. (1) forgot
(2) dropped
(3) overlook
(4) special
(5) fallen

Solution:2

38. (1) only
(2) spoil
(3) old
(4) troubling
(5) famous

Solution:1

39. (1) feared
(2) protective
(3) lovely
(4) lonely
(5) pamper

Solution:4

40. (1) competitions
(2) associating
(3) play

(4) partnership

(5) companion

Solution:5

QUANTITATIVE APTITUDE

1. If the present population of a state is 27500 and after 2 years it increases to 40,931, then what is the rate of increase per year ?
- (1) 25%
(2) 10%
(3) 17%
(4) 13%
(5) 22%

Solution:5

$$(5) P = P_0 \left(1 + \frac{R}{100}\right)^T$$

$$\Rightarrow 40931 = 27500 \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow \frac{40931}{27500} = \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow \frac{148.84}{100} = \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow \frac{14884}{10000} = \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow \left(\frac{122}{100}\right)^2 = \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow 1 + \frac{R}{100} = \frac{122}{100}$$

$$\Rightarrow \frac{R}{100} = \frac{122}{100} - 1 = \frac{22}{100}$$

$$\therefore R = 22\%$$

2. Train A which is 320m long can cross a pole in 16 seconds. If it halts 5 times each time for exactly 18 minutes, how many hours will it take to cover a distance of 57 kms? (in hours)
- (1) 8
(2) $10\frac{1}{2}$
(3) $8\frac{1}{2}$

(4) 9

(5) $9\frac{1}{2}$

Solution:5

(5) Speed of train

$$= \frac{\text{Length of train}}{\text{Time taken in crossing}}$$

$$= \frac{320}{16} = 20 \text{ m/sec.}$$

$$= \left(20 \times \frac{18}{5}\right) \text{ kmph}$$

$$= 72 \text{ kmph}$$

∴ Time spent in haltage

$$= 5 \times 18$$

$$= 90 \text{ minutes} = \frac{3}{2} \text{ hours}$$

∴ Total time taken in covering 576 km.

$$= \left(\frac{576}{72} + \frac{3}{2}\right) \text{ hours}$$

$$= 9\frac{1}{2} \text{ hours}$$

3. Gita, Shweta and Sita invested Rs. 4200, Rs. 8400 and 5400 respectively while starting a business. At the end of the year, they earned a profit of Rs. 24,000. Sita invested 32% of her share of the profit in a saving scheme. How much amount is left with her?

(1) Rs. 5,432

(2) Rs. 4,324

(3) Rs. 4,899

(4) Rs. 5,966

(5) Rs. 4,896

Solution:5

(5) Geeta : Shweta : Sita

$$= 4200 : 8400 : 5400$$

$$= 7 : 14 : 9$$

Sum of the terms of ratio

$$= 7 + 14 + 9 = 30$$

Sita's share

$$= \text{Rs.} \left(\frac{9}{30} \times 24000 \right)$$

$$= \text{Rs.} 7200$$

Investment by Sita in savings scheme = 32%

∴ Remaining amount with Sita

$$= (100 - 32)\% \text{ of } 7200$$

$$= \frac{7200 \times 68}{100} = \text{Rs.} 4896$$

4. In a class of 80 students and 5 teachers, each student got sweets that are 15% of the total number of students and each teacher got sweets, that are 25% of the total number of students. How many sweets were there?
- (1) 1050
(2) 1060
(3) Other than those given as options
(4) 1040
(5) 1030

Solution:2

(2) Sweets got by each student

$$= \frac{80 \times 15}{100} = 12$$

Sweets got by each teacher

$$= \frac{80 \times 25}{100} = 20$$

∴ Total number of sweets

$$= (80 \times 12 + 5 \times 20)$$

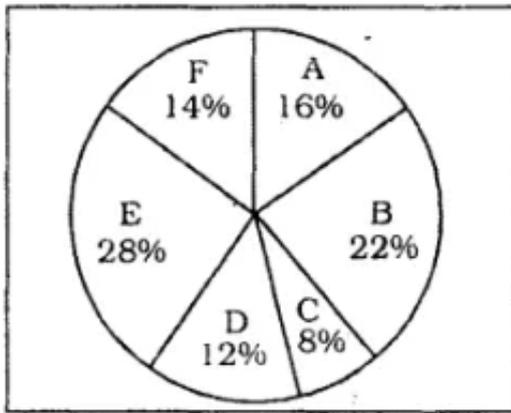
$$= 960 + 100 = 1060$$

Directions (5-9) : Refer to the pie-chart and the table and answer the given questions.

Distribution of total number of shirts (linen and cotton) sold by 6

different stores in 2003

Total number of shirts



Stores	Respective ratio of number of linen shirts to cotton shirts
A	7 : 5
B	5 : 6
C	3 : 2
D	5 : 3
E	4 : 3
F	7 : 3

5. What is the difference between average number of linen shirts sold by stores D and E together and average number of cotton shirts sold by the same stores together?
- (1) 2920
 - (2) 2880
 - (3) 2940
 - (4) 3140
 - (5) 3060

Solution:3

(3) Number of linen shirts sold by stores D and E

$$= \left(\frac{84000 \times 12}{100} \times \frac{5}{8} \right) + \left(84000 \times \frac{28}{100} \times \frac{4}{7} \right)$$

$$= 6300 + 13440 = 19740$$

Number of cotton shirts sold by these stores

$$= 84000 \times \frac{12}{100} \times \frac{3}{8}$$

$$+ 84000 \times \frac{28}{100} \times \frac{3}{7}$$

$$= 3780 + 10080 = 13860$$

∴ Required difference

$$= \frac{1}{2}(19740 - 13860)$$

$$= \frac{5880}{2} = 2940$$

6. What is the respective ratio between the number of shirts (linen and cotton both) sold by store C and number of linen shirts sold by store F?

(1) 22 : 31

(2) 30 : 41

(3) 40 : 49

(4) 20 : 29

(5) 44 : 57

Solution:3

(3) Total number of shirts

$$\text{sold by C} = \frac{84000 \times 8}{100}$$

$$= 840 \times 8$$

Linen shirts sold by store F

$$= 84000 \times \frac{14}{100} \times \frac{7}{10}$$

$$= 84 \times 14 \times 7$$

Required ratio

$$= (840 \times 8) : (84 \times 14 \times 7)$$

$$= 40 : 49$$

7. Total number of cotton shirts sold by stores A and B together is what percent of the number of shirts (linen and cotton both) sold by store E?

- (1) $62\frac{1}{3}$
- (2) $64\frac{1}{3}$
- (3) $61\frac{2}{3}$
- (4) $68\frac{1}{2}$
- (5) $66\frac{2}{3}$

Solution:5

(5) Cotton shirts sold by stores A and B

$$= 84000 \times \frac{16}{100} \times \frac{5}{12} + 84000$$

$$\times \frac{22}{100} \times \frac{6}{11}$$

$$= 5600 + 10080 = 15680$$

Shirts sold by store E

$$= \frac{84000 \times 28}{100} = 23520$$

∴ Required percent

$$= \frac{15680}{23520} \times 100$$

$$= \frac{200}{3} = 66\frac{2}{3}\%$$

8. What is the central angle corresponding tshirts (linen and cotton) sold by store E?

- (1) 100.8°
- (2) 96.4°
- (3) 104.2°
- (4) 98.8°
- (5) 102.6°

Solution:1

$$(1) \therefore 100\% \equiv 360^\circ$$

$$\therefore 1\% \equiv \frac{360}{100}$$

$$\therefore 28\% \equiv \frac{360}{100} \times 28 = 100.8^\circ$$

9. Number of shirts (linen and cotton both) sold by store D is what percent more than the number of linen shirts sold by store B?
- (1) 18
 - (2) 22
 - (3) 16
 - (4) 24
 - (5) 20

Solution:5

(5) Shirts sold by store D

$$= \frac{84000 \times 12}{100} = 10080$$

Linen shirts sold by store B

$$= 84000 \times \frac{22}{100} \times \frac{5}{11} = 8400$$

∴ Required percent

$$= \frac{10080 - 8400}{8400} \times 100$$

$$= \frac{16800}{8400} = 20\%$$

10. A bag contains 6 black and 8 white balls. One ball is drawn at random. What is the probability that the ball drawn is white?

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

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

(3) $\frac{1}{8}$

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

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

Solution:2

(2) Number of balls in the bag
 $= 6 + 8 = 14$
 Total possible outcomes
 $=$ Selection of 1 ball out of 14 balls
 $= {}^{14}C_1 = 14$
 Total favourable outcomes
 $=$ Selection of 1 ball out of 8 white balls $= {}^8C_1 = 8$
 \therefore Required probability
 $= \frac{8}{14} = \frac{4}{7}$

11. The present ages of Ranjana and Rakhi are in the ratio of 15 : 17 respectively. After 6 years, the respective ratio between the age of Ranjana and Rakhi will be 9 : 10. What will be the age of Ranjana after 6 years?
- (1) Other than those given as options
 (2) 40 years
 (3) 34 years
 (4) 30 years
 (5) 36 years

Solution:5
 (5) Ranjana's present age
 $= 15x$ years
 Rakhi's present age $= 17x$ years
 After 6 years,

$$\frac{15x + 6}{17x + 6} = \frac{9}{10}$$

$$\Rightarrow 153x + 54 = 150x + 60$$

$$\Rightarrow 153x - 150x = 60 - 54$$

$$\Rightarrow 3x = 6 \Rightarrow x = 2$$
 \therefore Ranjana's age after 6 years
 $= 15x + 6$
 $= (15 \times 2 + 6)$ years $= 36$ years

12. The simple interest (p.a.) accrued on an amount of Rs. 17,000 at the end of four years is Rs. 6,800. What would be the compound interest (compounded annually) accrued on the same amount at the same rate after two years?
- (1) Cannot be determined
 (2) Other than those given as options
 (3) Rs. 3,570

(4) Rs. 3,260

(5) Rs. 3,980

Solution:3

$$(3) \text{ Rate} = \frac{\text{S.I.} \times 100}{\text{Principal} \times \text{Time}}$$

$$= \frac{6800 \times 100}{17000 \times 4}$$

$$= 10\% \text{ per annum}$$

$$\therefore \text{C.I.} = P \left[\left(1 + \frac{R}{100} \right)^T - 1 \right]$$

$$= 17000 \left[\left(1 + \frac{10}{100} \right)^2 - 1 \right]$$

$$= 17000 \left[\left(\frac{11}{10} \right)^2 - 1 \right]$$

$$= 17000 \times \left(\frac{121}{100} - 1 \right)$$

$$= 17000 \times \frac{21}{100} = \text{Rs. } 3570$$

13. In how many different ways can the letters of the word 'CANDIDATE' be arranged in such a way that the vowels always come together?

(1) 4320

(2) 1440

(3) 720

(4) 840

(5) 1560

Solution:1

(1) In the word CANDIDATE, letters C, N, D, D, T are consonants and A, I, A, E are vowels.

We have to arrange C, N, D, D, T (A I A E) in which 'D' comes twice and A comes twice.

∴ Number of arrangements

$$= \frac{6! \times 4!}{2! 2!}$$

$$= \frac{6 \times 5 \times 4 \times 3 \times 2 \times 4 \times 3 \times 2}{2 \times 2}$$

$$= 4320$$

14. If 7 boys and 2 men working together can do three times as much work per hour as a boy and a man together, what will be the respective ratio of work done by a boy and a man for the given time?

(1) 3 : 1

(2) 1 : 2

(3) 1 : 3

(4) 2 : 3

(5) 1 : 4

Solution:

(5) 7 boys + 2 men

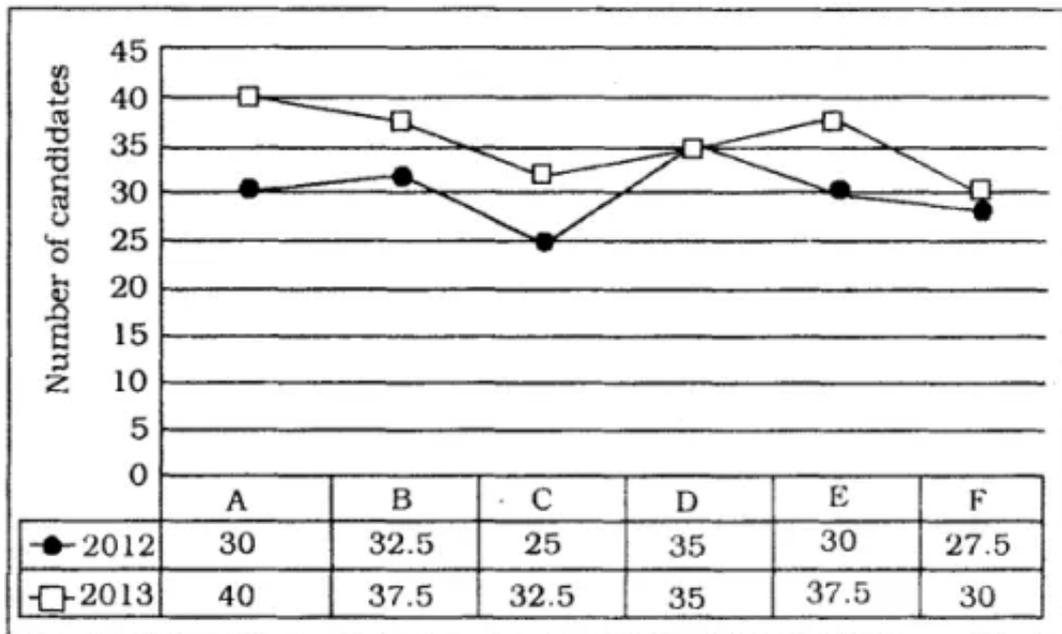
≡ 3 boys + 3 men

⇒ 4 boys ≡ 1 man

∴ Required ratio = 1 : 4

Directions (15-19) : Refer to the graph and answer the given questions?

Data related to number of candidates appearing for an entrance test from various cities (in lakhs)



15. What is the respective ratio of the number of candidates appearing for the entrance test from city A in 2013 and city E in the same year?
- (1) 15 : 14
 - (2) 11 : 12
 - (3) 12 : 13
 - (4) 16 : 15
 - (5) 17 : 16

Solution:4

(4) Required ratio = 40 : 37.5
 = 400 : 375
 = 16 : 15

16. What is the average number of candidates appearing for the entrance test from all cities together in the year 2012?
- (1) 35,00000
 - (2) 30,00000
 - (3) 31,00000
 - (4) 38,00000
 - (5) 40,00000

Solution:2

(2) Required average

$$= \left(\frac{30 + 32.5 + 25 + 35 + 30 + 27.5}{6} \right) \text{ lakhs}$$

$$= \left(\frac{180}{6} \right) \text{ lakhs}$$

$$= 3000000$$

17. The number of candidates appearing for the entrance test from city D in the year 2013 is what percent more than the number of candidates appearing for the entrance test from city C in the same year?
- (1) 7.7
 - (2) 8.7
 - (3) 6.7
 - (4) 9.72
 - (5) None of these

Solution:1

(1) Required percent

$$= \left(\frac{35 - 32.5}{32.5} \right) \times 100$$
$$= \frac{2.5 \times 100}{32.5} = 7.7$$

18. What is the respective ratio of the number of students appearing for the entrance test from cities B, C and F in the year 2012 to the number of students appearing for the entrance test in the year 2013 from the same cities?
- (1) 18 : 19
 - (2) 15 : 16
 - (3) 11 : 12
 - (4) 17 : 20
 - (5) 15 : 19

Solution:4

(4) Required ratio = $(32.5 + 25 + 27.5) : (37.5 + 32.5 + 30)$
 $= 85 : 100 = 17 : 20$

19. If the total number of candidates appearing from all the cities together in year 2014 is 10 % more than that in 20,13, then what is the total number of candidates in the year 2014?
- (1) 36675000
 - (2) 45000000
 - (3) 26675000
 - (4) 242500000
 - (5) Other than those given as options

Solution:5

(5) Number of candidates who appeared in 2013 = $(40 + 37.5 + 32.5 + 35 + 37.5 + 30)$ lakhs
= 212.5 lakhs

∴ Number of candidates who appeared in 2014

$$= \frac{212.5 \times 110}{100} \text{ lakhs}$$

$$= 233.75 \text{ lakhs}$$

20. What is the probability that a number selected from numbers 1, 2, 3,..... 30, is prime number, when each of the given numbers is equally likely to be selected?

(1) $\frac{9}{30}$

(2) $\frac{8}{30}$

(3) $\frac{10}{30}$

(4) $\frac{11}{30}$

(5) $\frac{21}{30}$

Solution:3

(3) Prime numbers in 1, 2, 3
.... 30.
= 2, 3, 5, 7, 11, 13, 17, 19, 23,
29 = 10

$$\text{Required probability} = \frac{10}{30} = \frac{1}{3}$$

21. Bhavana decided to donate 12% of her monthly salary to an orphanage. On the day of donation she changed her mind and donated Rs. 2,400 which was 125% of what she had decided earlier. How much is Bhavati's salary?

(1) Cannot be determined

(2) Other than those given as options

(3) Rs. 14,750

(4) Rs. 18,500

(5) Rs. 16,000

Solution:5

(5) Let Bhavana's monthly salary be Rs. x .

According to the question,

$$x \times \frac{12}{100} \times \frac{125}{100} = 2400$$

$$\Rightarrow x = \frac{2400 \times 100 \times 100}{12 \times 125}$$

$$= \text{Rs. } 16000$$

22. Gaurav spent Rs. 38460 on the renovation of his home, Rs. 24468 on buying home theatre and the remaining 28% of 116. the total amount he had as cash with him.

What was the total amount?

- (1) Cannot be determined
- (2) Rs. 76,500
- (3) Other than those given as options
- (4) Rs. 92,600
- (5) Rs. 87,400

Solution:5

(5) Expense on home renovation and home theatre

$$= 100 - 28$$

$$= 72\%$$

If total amount be Rs. x , then

$$x \times \frac{72}{100} = \text{Rs. } (38460 + 24468)$$

$$\Rightarrow x \times \frac{72}{100} = 62928$$

$$\Rightarrow x = \frac{62928 \times 100}{72}$$

$$= \text{Rs. } 87400$$

Directions (23-28) : Study the table to answer the questions that follow :

**Total number of Employees
working in Various Organisations**

ORGANI- SATIONS	A	B	C	D	E
YEARS					
2001	247	298	197	388	281
2002	324	385	225	432	275
2003	331	412	263	406	349
2004	375	404	377	454	406
2005	345	323	396	440	445
2006	400	356	432	418	512

23. What is the average number of employees working in Organisation C over the given years?
- (1) Other than those given as options
(2) 315
(3) 331
(4) 328
(5) 309

Solution:2

(2) Average number of employees in organisation C

$$\begin{aligned} & 197 + 225 + 263 \\ = & \frac{+377 + 396 + 432}{6} \\ = & \frac{1890}{6} = 315 \end{aligned}$$

24. The total number of employees working in organisations A and E together in the year 2005 is what percent more than the number of employees working in organisation D in the same year? (rounded off to two places after decimal)
- (1) 79.55
(2) 80.25
(3) 82.35
(4) 76.49
(5) Other than those given as options

Solution:1

(1) Total employees in organisations A and E in 2005

$$= (345 + 445) = 790$$

Required percent

$$= \left(\frac{790 - 440}{440} \right) \times 100$$

$$= \frac{3500}{44} = 79.55$$

25. What is the respective ratio between the number of employees working in organisation A in the year 2006 and the total number of employees working in Organisation E in the same year?

(1) 2 : 3

(2) 12 : 19

(3) 22 : 39

(4) 25 : 32

(5) Other than those given as options

Solution:4

(4) Required ratio

$$= 400 : 512$$

$$= 25 : 32$$

26. The number of employees working in organisation C in the year 2004 is approximately what percent of the total number of employees working in various organisations B, D and E together in that year?

(1) 30

(2) 35

(3) 27

(4) 23

(5) 13

Solution:1

(1) Total employees in organisations B, D and E in 2004

$$= 404 + 454 + 406 = 1264$$

$$\text{Required percent} = \frac{377 \times 100}{1264}$$

$$= 30\%$$

27. What is the difference between the total number of employees working in organisation B over the years 2001, 2002 and 2003 together and the total number of employees working in organisation D over the same years together?
- (1) 133
 (2) 138
 (3) 135
 (4) 131
 (5) Other than those given as options

Solution:4

(4) Total employees in 2001, 2002 and 2003 :

Organisation B
 $\Rightarrow 298 + 385 + 412$
 $= 1095$

Organisation D
 $\Rightarrow 388 + 432 + 406$
 $= 1226$

Required difference
 $= 1226 - 1095 = 131$

28. What is the average number of employees working in organisation B over the given years?
- (1) 336
 (2) 363
 (3) 366
 (4) 367
 (5) 376

Solution:2

(2) Required average

$$= \frac{298 + 385 + 412 + 404 + 323 + 356}{6}$$

$$= \frac{2178}{6} = 363$$

Directions (29-33) : What approximate value will come in place of the question mark in the given questions? You are not expected to calculate the exact value.

29. $5003 \times 14.96 \div 25.12 + ? = 12^2 \times 5^2$
 (1) 600

- (2) 1200
- (3) 800
- (4) 1000
- (5) 900

Solution:1

$$(1) 5000 \times 15 \div 25 + ? \approx 12^2 \times 5^2$$

$$\Rightarrow \frac{5000 \times 15}{25} + ? = 144 \times 25$$

$$\Rightarrow 3000 + ? = 3600$$

$$\Rightarrow ? \approx 3600 - 3000 = 600$$

30. $11.95^2 \times 5.05 + 15.01^2 \times 2.99 = ?$

- (1) 1150
- (2) 1215
- (3) 1885
- (4) 1180
- (5) 1395

Solution:5

$$(5) ? \approx 12^2 \times 5 + 15^2 \times 3$$

$$\approx 144 \times 5 + 225 \times 3 = 720 + 675$$

$$\approx 1395$$

31. $31.95^2 - 12.05^2 + (1987.25 + 21.85) \div ? = 900$

- (1) 115
- (2) 120
- (3) 90
- (4) 85
- (5) 100

Solution:5

$$(5) 32^2 - 12^2 + (1987.25 + 21.85) \div ? = 900$$

$$\Rightarrow (32 + 12)(32 - 12) + 2009 \div ? = 900$$

$$\Rightarrow 880 + \frac{2000}{?} = 900$$

$$\Rightarrow \frac{2000}{?} = 900 - 880 = 20$$

$$\Rightarrow 20 \times ? = 2000$$

$$\Rightarrow ? = \frac{2000}{20} = 100$$

32. $\frac{3}{5}$ of $\frac{2}{7}$ of $\frac{5}{12}$ of 555 = ?

(1) 27

(2) 48

(3) 58

(4) 40

(4) 32

Solution:4

$$(4) ? = \frac{3}{5} \times \frac{2}{7} \times \frac{5}{12} \times 555$$
$$= 40$$

33. $2489.99 \div 9.85 + 54.94\%$ of 271 = ?

(1) 800

(2) 300

(3) 500

(4) 700

(5) 400

Solution:5

$$(5) ? = 2490 \div 10 + \frac{55 \times 270}{100}$$

$$\approx 249 + 148.5 = 397.5$$

\therefore Required answer = 400

Calculations (124 - 128)

A \Rightarrow Hollywood movies

B \Rightarrow Bollywood movies

C \Rightarrow Regional movies

Male Students

Percentage of males who like all the three movies

$$= 100 - (16 + 22 + 12 + 30 + 10 + 6)$$

$$= 100 - 96 = 4\%$$

$$\therefore 4\% \equiv 18$$

$$\therefore 100\% \equiv \frac{18 \times 100}{4} = 450$$

$$\therefore \text{Only A} \Rightarrow \frac{450 \times 16}{100} = 72$$

$$\text{Only B} \Rightarrow \frac{450 \times 22}{100} = 99$$

$$\text{Only C} \Rightarrow \frac{450 \times 12}{100} = 54$$

Only A and B

$$\Rightarrow \frac{450 \times 30}{100} = 135$$

Only B and C

$$\Rightarrow \frac{450 \times 10}{100} = 45$$

$$\text{Only C and A} \Rightarrow \frac{450 \times 6}{100} = 27$$

All A, B and C \Rightarrow 18

Female Students

Males : Females = 9 : 7

\therefore Total number of female students

$$= \frac{7}{9} \times 450 = 350$$

$$\therefore \text{Only A} \Rightarrow \frac{350 \times 14}{100} = 49$$

$$\text{Only B} \Rightarrow \frac{350 \times 20}{100} = 70$$

$$\text{Only C} \Rightarrow \frac{350 \times 8}{100} = 28$$

Only A and B

$$\Rightarrow \frac{350 \times 26}{100} = 91$$

Only B and C

$$\Rightarrow \frac{350 \times 16}{100} = 56$$

Only C and A

$$\Rightarrow \frac{350 \times 10}{100} = 35$$

All A, B and C

$$\Rightarrow 350 - 329 \\ = 21$$

Directions (34-38) Read the information given in the passage and answer the given questions.

There are number of students in a college. Each of them likes either one or more of the following types of movies-Hollywood, Bollywood and Regional movies. The respective ratio of male and female students is 9

16% of the male students like only Hollywood movies. 22% like only Bollywood movies. 12% like only Regional movies. 30% of the male students like only Hollywood and Bollywood movies. 10% like only Bollywood and Regional movies and 6% like only Regional and Hollywood movies. The remaining 18 male students like all the given types of movies.

14% of the female students like only Hollywood movies, 20% like only Bollywood movies. 8% like only Regional movies. 26% of the female students like only Hollywood and Bollywood movies. 16% like only Bollywood and Regional movies and 10% like only Regional and Hollywood movies. The remaining female students like all the given types of movies.

34. What is the difference between the number of male students who like Bollywood movies and number of female students who like the same?
- (1) 69
 - (2) 59
 - (3) 63
 - (4) 65
 - (5) 57

Solution:2

$$\begin{aligned} & \text{(2) Required difference} \\ & = (99 + 135 + 45 + 18) - (70 + \\ & \quad 91 + 56 + 21) \\ & = 297 - 238 = 59 \end{aligned}$$

35. Number of students (both male and female) who like all the given types of movies is approximately what percent of the number of female students who like only one of the given types of movies?
- (1) 12
 - (2) 18
 - (3) 32
 - (4) 27
 - (5) 22

Solution:4

$$\begin{aligned} & \text{(4) Females who like only one} \\ & \text{type of the movies} \\ & = 49 + 70 + 28 \\ & = 147 \\ & \text{Students who like all three} \\ & \text{types of movies} \\ & = 18 + 21 = 39 \\ & \therefore \text{ Required percent} \\ & = \frac{39}{147} \times 100 \approx 27 \end{aligned}$$

36. Number of male students who like only two of the given types of movies is what percent more than the number of female students who like only two of the given types of movies?
- (1) $11\frac{1}{21}$
 - (2) $16\frac{1}{7}$

(3) $9\frac{11}{21}$

(4) $8\frac{1}{7}$

(5) 13.74

Solution:5

(5) Students who like only two types of movies :

Males $\Rightarrow 135 + 45 + 27 = 207$

Females $\Rightarrow 91 + 56 + 35 = 182$

Required percent

$$= \left(\frac{207 - 182}{182} \right) \times 100$$

$$= \frac{2500}{182} = 13.74$$

37. What is the respective ratio between number of female students who like Hollywood movies and number of male students who like the same?

(1) 9 : 14

(2) 3 : 4

(3) 5 : 8

(4) 5 : 6

(5) 7 : 9

Solution:5

(5) Required ratio

$$= (49 + 91 + 35 + 21) : (72 + 135 + 27 + 18)$$

$$= 196 : 252 = 7 : 9$$

38. What is the value of (mentioned in the passage)?

(1) 960

(2) 800

(3) 640

(4) 720

(5) 880

Solution:2

$$(2) x = 450 + 350 = 800$$

39. The average height of 16 students in a class is 142 cm. If the height of the teacher is added the average increases by 1 cm. What is the height of the teacher in cm?
- (1) 159
(2) 149
(3) 158
(4) 168
(5) 159.5

Solution:1

$$\begin{aligned} & \text{(1) Height of teacher} \\ & = (142 + 17 \times 1) \text{ cm.} \\ & = 159 \text{ cm.} \end{aligned}$$

40. A shopkeeper bought a table marked at Rs. 200 at successive discounts of 10% and 15% respectively. He spent Rs. 7 on transport and sold the table for Rs. 208. What will be his profit percentage?
- (1) 35
(2) 40
(3) 30
(4) 45
(5) 32

Solution:3

(3) Single equivalent discount for 10% and 15%

$$\begin{aligned} & = \left(15 + 10 - \frac{15 \times 10}{100} \right) \% \\ & = 23.5\% \end{aligned}$$

∴ C.P. of table

$$= 200 \times (100 - 23.5)\%$$

$$= \frac{200 \times 76.5}{100} = \text{Rs. } 153$$

Expense on transport = Rs. 7

$$\therefore \text{Actual C.P.} = 153 + 7$$

$$= \text{Rs. } 160$$

∴ Profit percent

$$= \frac{208 - 160}{160} \times 100$$

$$= \frac{4800}{160} = 30\%$$

41. Pipe A and B can fill a tank in 10 hours and 8 hours respectively. After certain time, pipe A was closed. It took a total of 6 hours to fill the tank completely. For how many hours did pipe A work?

- (1) $4\frac{1}{4}$ hours
- (2) $2\frac{1}{2}$ hours
- (3) $3\frac{1}{3}$ hours
- (4) $5\frac{1}{3}$ hours
- (5) $6\frac{1}{2}$ hours

Solution:2

(2) Let pipe A remained open for x hours.

According to the question,

$$\frac{x}{10} + \frac{6}{8} = 1$$

$$\Rightarrow \frac{x}{10} = 1 - \frac{3}{4} = \frac{1}{4}$$

$$\Rightarrow x = \frac{10}{4} = 2\frac{1}{2} \text{ hours}$$

42. on walking at $\frac{3}{4}$ of his usual speed a man reaches his office 20 minutes late. What is the usual time taken by him in reaching his office?

- (1) 75 minutes
- (2) 60 minutes
- (3) 40 minutes
- (4) 30 minutes
- (5) None of these

Solution:2

(2) Actual speed = x kmph

New speed = $\frac{3x}{4}$ kmph

Total distance = y km

$$\therefore \frac{y}{\frac{3x}{4}} - \frac{y}{x} = \frac{20}{60}$$

$$\Rightarrow \left(\frac{4}{3} - 1\right) \frac{y}{x} = \frac{1}{3}$$

$$\Rightarrow \frac{y}{x} = 1$$

∴ Required time = 60 minutes

Directions (43-47) : What will come in place of question mark (?) in the following number series ?

43. 15 29 56 108 208 400 ?

- (1) 758
- (2) 770
- (3) 784
- (4) 768
- (5) 778

Solution:4

(4) The pattern is :

$$15 \times 2 - 1 = 30 - 1 = 29$$

$$29 \times 2 - 2 = 58 - 2 = 56$$

$$56 \times 2 - 4 (= 2 \times 2)$$

$$= 112 - 4 = 108$$

$$108 \times 2 - 8 (= 2 \times 4)$$

$$= 216 - 8 = 208$$

$$208 \times 2 - 16 (= 2 \times 8)$$

$$= 416 - 16 = 400$$

$$400 \times 2 - 32 (= 2 \times 16)$$

$$= 800 - 32 = \boxed{768}$$

44. 13 -21 34 -55 89 -144 ?

- (1) 233
- (2) 255
- (3) 244
- (4) 266
- (5) 222

Solution:1

(1) The pattern is :

$$13 - (-21) = 34$$

$$-21 - 34 = -55$$

$$34 - (-55) = 89$$

$$-55 - 89 = -144$$

$$89 - (-144) = \boxed{233}$$

45. 133 183 241 307 381 463 ?

- (1) 557
- (2) 521
- (3) 553
- (4) 541
- (5) Other than those given as options

Solution:3

(3) The pattern is

$$133 + 50 = 183$$

$$183 + 58 = 241$$

$$241 + 66 = 307$$

$$307 + 74 = 381$$

$$381 + 82 = 463$$

$$463 + 90 = \boxed{553}$$

46. 1.21 1.44 1.69 1.96 2.25 2.56?

- (1) 3.61
- (2) 2.85
- (3) 3.24
- (4) 2.94
- (5) Other than, those given as options

Solution:5

(5) The pattern is :

$$(1.1)^2 = 1.21$$

$$(1.2)^2 = 1.44$$

$$(1.3)^2 = 1.69$$

$$(1.4)^2 = 1.96$$

$$\therefore ? = (1.7)^2 = 2.89$$

47. 36 52 70 90 112 136 ?

- (1) 150
- (2) 152
- (3) 162
- (4) 140
- (5) Other-than those given as options

Solution:3

(3) The pattern is :

$$36 + 16 = 52$$

$$52 + 18 = 70 \quad /$$

$$70 + 20 = 90$$

$$90 + 22 = 112$$

$$112 + 24 = 136$$

$$136 + 26 = \boxed{162}$$

48. A committee of five members is to be formed out of 3 trainees, 4 professors and 6 research associates. In how many different ways this can be done if the committee should have all the 4 professors and 1 research associate or all 3 trainees and 2 professors?

(1) 15

(2) 18

(3) 25

(4) 12

(5) Other than those given as options

Solution:4

(4) Number of committees.

$$= {}^4C_4 \times {}^6C_1 + {}^3C_3 \times {}^4C_2$$

$$= 1 \times 6 + 1 \times \frac{4 \times 3}{1 \times 2}$$

$$= 6 + 6 = 12$$

49. A 20 litre mixture contains milk and water in the respective ratio of 3 : 2. Then 10 litres of the mixture is removed and replaced with pure milk and the operation is repeated once more. At the end of the two removals and replacements, what is the ratio of milk and water in the resultant mixture respectively?

(1) 17: 3

(2) 9: 1

(3) 4 : 17

(4) 5 : 3

(5) 3 : 14

Solution:2

(2) In 20 litres of mixture

$$\text{Milk} = \frac{3}{5} \times 20 = 12 \text{ litres}$$

Water = 8 litres

In 10 litres of mixture,

Milk = 6 litres

Water = 4 litres

On adding 10 litres of milk,

$$\text{Milk} \Rightarrow 12 - 6 + 10 = 16 \text{ litres}$$

$$\text{Water} \Rightarrow 8 - 4 = 4 \text{ litres}$$

Again, in 10 litres of mixture,

$$\text{Milk} = \frac{4}{5} \times 10 = 8 \text{ litres}$$

Water = 2 litres

On adding 10 litres of milk,

$$\text{Milk} = 16 - 8 + 10 = 18 \text{ litres}$$

Water = 2 litres

$$\text{Required ratio} = 18 : 2 = 9 : 1$$

50. A trader marks up his goods by 50%. However, he could sell only-third of his stock at this price. The half of the remaining stock was sold at a discount of 7.14% and the remaining at a discount of 16.67%. Find the overall percentage profit of the trader.

(1) 38%

(2) 42%

(3) 29%

(4) 34%

(5) 40%

Solution:1

(1) Total C.P. = Rs. 100
Marked price = Rs.150
S.P of one third stock = Rs.50
Remaining stock = Rs. 100
S.P of half stock

$$= \frac{50 \times 92.86}{100} = \text{Rs. } 46.43$$

S.P. of remaining half stock

$$= \frac{50 \times 83.33}{100} = \text{Rs. } 41.665$$

Total S.P

$$= (50 + 46.43 + 41.665)$$

$$= \text{Rs. } 138.095$$

$$\therefore \text{Profit percent} = 38\%$$

REASONING

Directions (1-5) : In each of the following questions, relationship between different elements is shown in the statement. These statements are followed by two conclusions numbered I and II. Read both the statements and select the appropriate answer.

Give answer (1) if both the Conclusions I, and II are true

Give answer (2) if either Conclusion I or Conclusion II is true

Give answer (3) if neither Conclusion I nor Conclusion II is true

Give answer (4) if only Conclusion I is true

Give answer (5) if only Conclusion II is true

(1-2) : Statements :

$V \geq M = T > X; R < T \geq S$

1.

Conclusions :

I. $R < V$

II. $S \leq X$

Solution:4

(1-2) : $V \geq M = T > X$

$R < T \geq S$

$V \geq M = T > R$

$S \leq M = T > X$

$R < T > X$

$V \geq M = T \geq S$

1. (4) Conclusions

I. $R < V$: True

II. $S \leq X$: Not True

2. **Conclusions :**

I. $X < R$

II. $V \geq S$

Solution:5

2. (5) Conclusions

I. $X < R$: Not True

II. $V \geq S$: True

3. **Statements :**

$P < E \leq R > F; E \geq M; R < T$

Conclusions :

I. $T > M$

II. $F < M$

Solution:4

3. (4) $P < E \leq R > F$

$E \geq M$

$R < T$

$M \leq E \leq R < T$

$M \leq E \leq R > F$

Conclusions

I. $T > M$: True

II. $F < M$: Not True

4. **Statements :**

$R = Q \leq I \geq M = E; I < Z$

Conclusions :

I. $Q \leq E$

II. $M > Z$

Solution:3

(3) $R = Q \leq I \geq M = E$

$I < Z$

$Z > I \geq M$

Conclusions

I. $Q \leq E$: Not True

II. $M > Z$: Not True

5. **Statements :**

$N = D < H \geq R; V \geq H < J$

Conclusions :

I. $V > D$

II. $R < J$

Solution:1

(1) $N = D < H \geq R$

$V \geq H < J$

$N = D < H \leq V$

$J > H \geq R$

Conclusions

I. $V > D$: True

II. $R < J$: True

6. In a certain code, PARTICLE is written as USBQFMDJ and GENERATE is written

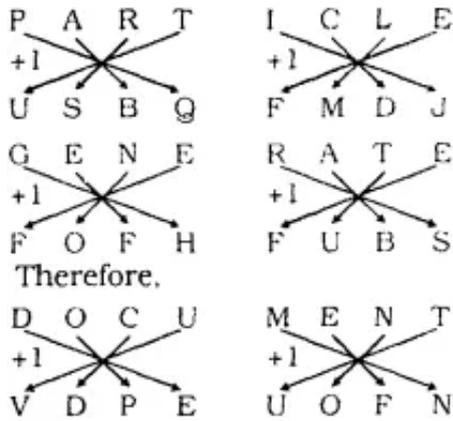
as FOF-

HFUBS, how is DOCUMENT written in that code?

- (1) VDEPUONF
- (2) VDPENFUQ
- (3) VDPEUOFN
- (4) PEUVDNOF
- (5) OFNVDUEP

Solution:3

(3)



7. In a class of 40 children, Sunetra's rank is eighth from the top. Sujit is five ranks below Sunetra. What is Sujit's rank from the bottom?
- (1) 27
 - (2) 28
 - (3) 29
 - (4) 26
 - (5) Other than those given as options

Solution:2

(2) The rank of Sunetra from the top = 8th
The rank of Sujit from the top = $8 + 5 = 13$ th
Therefore, Sujit's rank from the bottom = $40 - 13 + 1 = 28$ th

Directions (8-9) : Study the following information carefully and answer the questions given below :

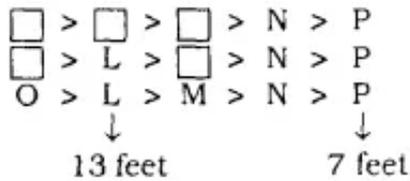
L, M, N, o and P are five different poles, each of different length. o is not the third shortest pole. N is bigger than only P. L is shorter than only one pole. The size of the shortest pole is 7 ft and that of the second tallest pole is 13 ft.

8. Which of the following poles is the third tallest?

- (1) M
- (2) Cannot be determined
- (3) N
- (4) P
- (5) L

Solution:1

(8-9) :



8. (1) Pole M is the third tallest.

9. According to the given arrangement, which of the following combinations of pole and length is correct?
- (1) N – 14 ft
 - (2) P – 5 ft
 - (3) O – 12 ft
 - (4) L – 13 ft
 - (5) Other than those given as options

Solution:4

(4) The size of Pole L is 13 feet.

10. R is sister of M. M is brother of H. D is mother of K. K is brother of M. How is R related to D?
- (1) Daughter
 - (2) Mother
 - (3) Other than those given as options
 - (4) Sister
 - (5) Data Inadequate

Solution:1

(1) K is brother of H, M and R.
 D is mother of H, M and R.
 R is daughter of D.

Directions (11 – 15) : Each of the following questions, 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 mark the appropriate answer.

Mark answer (1) If the data in statement I alone are sufficient to answer the question, while the data in statement H alone are not sufficient to answer the question.

Mark answer (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.

Mark answer (3) If the data either in statement I alone or in statement II alone are sufficient to answer the question.

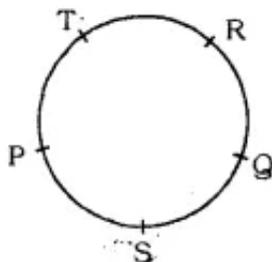
Mark answer (4) If the data in both statements I and II together are not sufficient to answer the question.

Mark answer (5) If the data in both the statements I and II together are necessary to answer the question.

11. P, Q, R, S and T are sitting around a circle facing towards the centre of the circle. Who is to the immediate right of T ?
- I. R, and S are in the same respective sequence to the immediate left of T.
- II. P is between S and T.

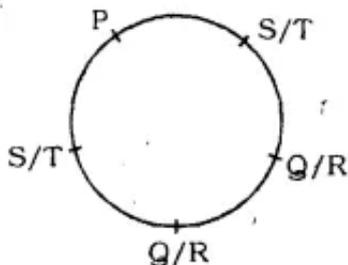
Solution:1

(1) From statement I



P is to the immediate right of T.

From statement II



12. How many dresses does 'P' have?
- I. P has two dresses less than what T has.
- II. M has seven dresses, which are thirty percent less than what T has.

Solution:5

12. (5) From statement I P has two dresses less than what T has. No answer. From statement II

M has seven dresses and T has 10 dresses. From both the statements P has $10 - 2 = 8$ dresses

13. How is 'smoking' written in a code language?

I. Thanks for not smoking' is written as 'be je we no' in that code language.

II. No Smoking Area' is written as 'no se do' in that code language.

Solution:5

13. (5) From both the statements

Thanks for not smoking → be

je we no

No smoking area → no se do

14. Who is the youngest among A, B, C, D and E?

I. B is younger than C and D.

II. A is younger than C but older than E.

Solution:4

(4) From statement I

C, D > B

From statement II

C > A > E

From both the statements

C > A > E

C, D > B

┌───┐
A > E

15. How many sons does P have?

I. C is the brother of B and A.

II. P has three children of which B is a girl,

Solution:2

(2) From statement I. C is the brother of B and A. It is not clear whether they are children of P or not.

From statement II .P has three children of which B is a girl. Therefore. P has two sons and one daughter.

Directions (16-20) : Study the following information carefully and answer the questions given below :

In a certain code language,

'capital cities are crowded' is written as 'ju sh pi be'

'crowded cities create chaos' is written as 'sh be nt ro'

'huge industries create capital' is written as 'db ju nt ka'

Industries are huge chaos' is written as 'ka pi ro db'

(All the codes are two letter codes)

16. What is the code for 'create' in the given code language?

(1) sh

(2) db

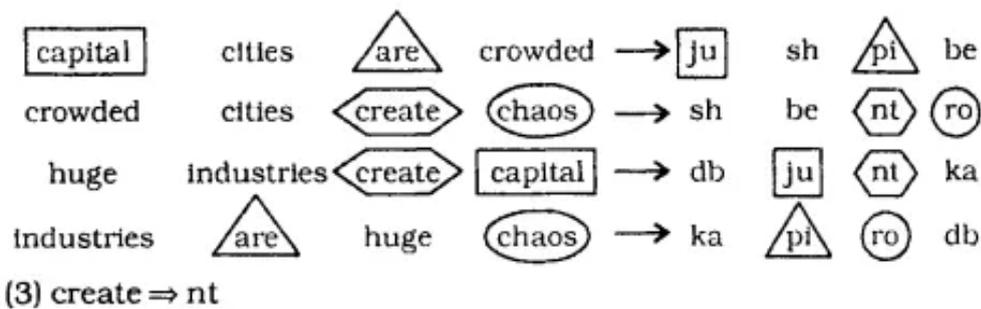
(3) nt

(4) ro

(5) pi

Solution:3

(16-20) :



17. What does 'ro' stand for in the given code language?

(1) chaos

(2) capital

(3) huge

(4) create

(5) are

Solution:1

(1) ro ⇒ chaos

18. What does 'ka' stand for in the given code language?

(1) either 'cities' or 'crowded'

(2) cities

(3) create

(4) either 'huge' or 'industries'

(5) chaos

Solution:4

(4) ka \Rightarrow huge/industries

19. Which of the following possibly means 'crowded metro cities' in the given code language?

(1) sh be ju

(2) sh be ka

(3) sh ka nt

(4) ka nt pi

(5) sh un be

Solution:5

(5) crowded cities \Rightarrow sh be

The code for 'metro' may be 'un'.

20. What is the code for 'capital' in the given code language? ,

(1) pi

(2) ju

(3) sh

(4) be

(5) db

Solution:2

(2) capital \Rightarrow ju

21. Pointing to a woman, Mr. Suresh said, she is the daughter of my grandfather's only daughter. How is Suresh related to the woman?

(1) Cousin

(2) Brother

(3) Other than those given as options

(4) Uncle

(5) Cannot be determined

Solution:5

(5) Only daughter of Suresh's grandfather means aunt or mother of Suresh.

Therefore, Suresh is either brother or cousin or that woman.

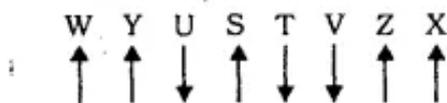
Directions (22-25) : Study the following information carefully and answer the questions given below :

Eight persons — S, T, U, V, W, X, Y and Z are seated in a straight line but not necessarily in the same order, some of them are facing south while some are facing North. S sits fourth to left of X. X sits at one of the extreme end of the line. Both the immediate neighbours of S face south. T sits second to left of Z. Z is not an immediate neighbour of S. Neither Z nor U sits at the extreme end of the line. Both the immediate neighbours of U face north. W sits to immediate left of Y. Immediate neighbours of V face opposite directions (i.e. if one neighbour of V faces north then the other faces south and vice versa). Immediate neighbours of T face opposite directions (i.e. if one neighbour of T faces north then the other faces south and vice-versa). People sitting at the extreme ends face the same directions (i.e. if one person faces North then the other also faces north and vice-versa).

22. Which of the following pairs represents immediate neighbours of the persons seated at the two extreme ends of the line?
- (1) U, Z
 - (2) T, Y
 - (3) W, T
 - (4) Y, Z
 - (5) S, T

Solution:4

(22-25) :



22. (4) W and X are seated at the two extreme ends of the line. Y is immediate neighbour of W and Z is immediate neighbour of X.

23. How many persons are seated between T and X ?
- (1) Four
 - (2) More than four
 - (3) One
 - (4) Three
 - (5) Two

Solution:5

(5) Two persons – V and Z – are seated between T and X.

24. If each of the persons is made to sit in alphabetical order from right to left the positions of how many will remain unchanged as compared to the original seating arrangement?
- (1) One
(2) Two
(3) Four
(4) None
(5) Three

Solution:1

(1)	W	Y	U	S	T	V	Z	X
	↑	↑	↓	↑	↓	↓	↑	↑
	Z	Y	X	W	V	U	T	S

25. Who amongst the following sits exactly between Z and T?
- (1) U
(2) V
(3) Y
(4) X
(5) W

Solution:2

(5) Two persons – V and Z – are seated between T and X.

Directions (26-30) : In each of the following questions three statements followed by two conclusions numbered I and II have been given. You have to consider the given statements to be true even if they seem to be at variance with 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 both the Conclusions I and II follow

Give answer (2) if either Conclusion I or Conclusion II follows

Give answer (3) if neither Conclusion I nor Conclusion II follows

Give answer (4) if only Conclusion I follows

Give answer (5) if only Conclusion II follows

26. **Statements :**

No meeting is an argument. All debates are arguments. Some debates are fights.

Conclusions :

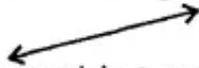
I. No fight is a meeting.

II. Some fights are meetings.

Solution:2

(2)

All debates are arguments.



No argument is a meeting.

A + E \Rightarrow E - type of Conclusion

"No debate is a meeting".

Some fights are debates.



All debates are arguments.

I + A \Rightarrow I-types of Conclusion

"Some fights are arguments".

Conclusion I and Conclusion II form Complementary Pair.

Therefore, either Conclusion I or Conclusion II follows.

27. **Statements :**

All hands are limbs. All limbs are fingers. Some fingers are thumbs.

Conclusions :

I. Some thumbs being limbs is a possibility.

II. All hands are fingers.

Solution:1

(1) All hands are limbs.



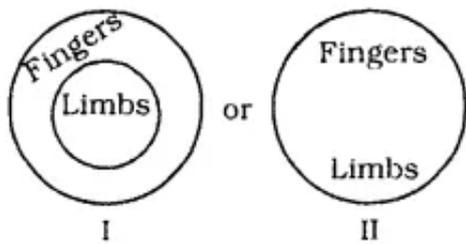
All limbs are fingers.

A + A \Rightarrow A-type of Conclusion

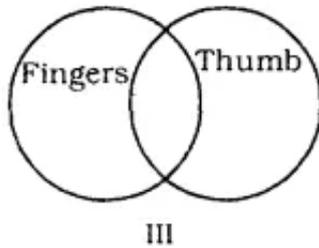
"All hands are fingers".

This is Conclusion II.

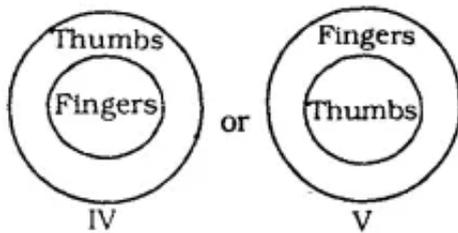
Venn diagrams of 'All limbs are fingers' :



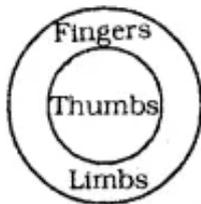
Venn diagrams of 'Some fingers are thumbs' :



or



After combining the Venn diagrams II and V, we get :



Thus, Conclusion I also follows.

28. Statements :

All teams are participants. All members are teams. No member is a captain. .

Conclusions :

- I. Atleast some participants are members.
- II. All teams being captains is a possibility.

Solution:4

(4)

All members are teams.

All teams are participants.

$A + A \Rightarrow A$ - type of Conclusion

"All members are participants".

Conclusion I is Converse of it.

No captain is a member.

All members are participants.

$E + A \Rightarrow O_1$ - type of Conclusion

"Some participants are not captains".

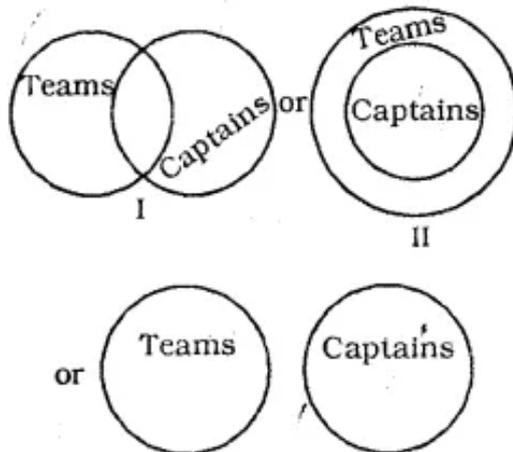
No captain is a member.

All members are teams.

$E + A \Rightarrow O_1$ - type of Conclusion

"Some teams are not captains".

Venn diagrams of 'Some teams are not captains' :



From Venn diagrams I and II,
some (not all) teams are cap-
tains.

29. **Statements :**

Some slopes are mountains. No mountain is a river. Some rivers are ponds.

Conclusions :

I. All ponds being mountains is a possibility.

II. All slopes being rivers is a possibility.

Solution:3

(3)

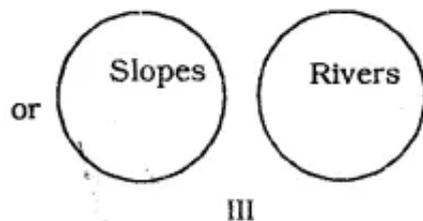
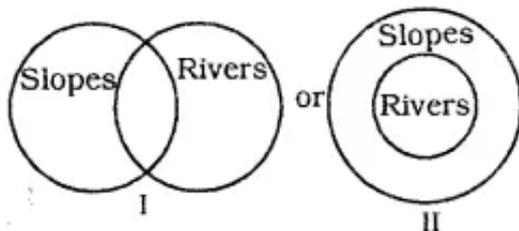
Some slopes are mountains.

No mountain is a river.

$I + E \Rightarrow O$ - type of Conclusion

"Some Slopes are not rivers."

Venn diagrams of 'Some slopes are not rivers' :



From Venn diagrams I and II, it is clear that 'Some slopes are rivers'.

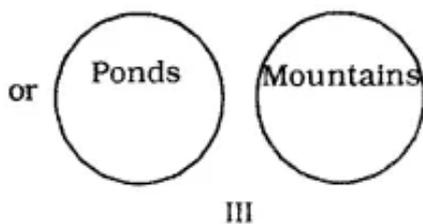
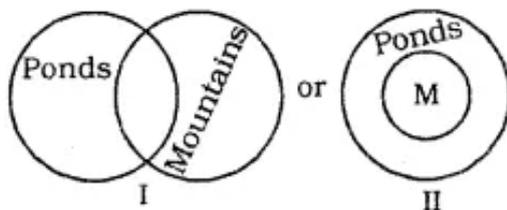
No mountain is a river.

Some rivers are ponds.

$E + I \Rightarrow O_1$ - type of Conclusion

"Some ponds are not mountains".

Venn diagrams of 'Some ponds are not mountains' :



From Venn diagrams I and II, some ponds are mountains.

30. **Statements :**

No gate is a door. All doors are walls. No wall is a ceiling.

Conclusions :

1. At least some gates are ceilings.
- II. No ceiling is a door.

Solution:5

(5) No gate is a door.

↙ ↘
All doors are walls.

$E + A \Rightarrow O_1$ - type of Conclusion

"Some walls are not gates".

All doors are walls.

↙ ↘
No wall is a ceiling.

$A + E \Rightarrow E$ - type of Conclusion

"No door is a ceiling".

Conclusion II is Converse of it:

31. **Statement :**

Company A has approached the government with a proposal to build road and other infrastructure for providing transport facilities in area X. Which of the following could possibly lead the government to turn down the proposal forwarded by Company A?

- (1) Residents of Area X and its adjoining areas have to walk for several kilometres to seek transport facilities.
- (2) Company B which had undertaken similar projects earlier had failed to build good quality roads in the area.
- (3) Although, area X is in dire need of road and infrastructure facilities, any company which undertook it would not make huge profits in the long run.
- (4) Area X is a land with very low economic productivity and negligible residents.
- (5) Area X is the unofficial hub for transportation of agriculture goods from State A to State B.

Solution:5

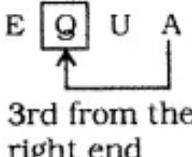
(5) Obviously, option (5) may be the reason for turning down the proposal of Company A. Area X is indulged in illegal trade of agriculture goods. Therefore, the Government may not be interested in developing infrastructure in the Area X.

32. If in the word EQUALITY, the positions of first and the fifth letters are interchanged, similarly the positions of the second and the sixth letters are interchanged and so on, which letter will be third from the right end?
- (1) I
 - (2) U
 - (3) Q
 - (4) E
 - (5) L

Solution:3

(3) 1 2 3 4 5 6 7 8
 E Q U A L I T Y

According to question,

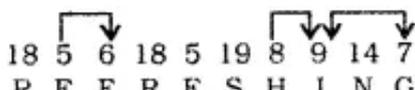
L I T Y E Q U A

 3rd from the
 right end

33. How many such pairs of letters are there in the word REFRESHING each of which has as many letters between them (in both forward and backward directions) in the word as they have in the English alphabet?
- (1) Three
 - (2) One
 - (3) Two
 - (4) None
 - (5) More than three

Solution:1

33. (1)

18 5 6 18 5 19 8 9 14 7
 R E F R E S H I N G



Directions (34-35) : Study the following information carefully and answer the questions given below :

J is the father of T. P is the brother of J. L is the mother of V. V is the brother of T. T is mother of S. T is the daughter-in-law of W.

34. How is J related to S?
- (1) Uncle
 - (2) Brother

- (3) Grand-father
- (4) Cousin
- (5) Father

Solution:3

(3) T is the daughter of J. T is the mother of S. Therefore, J is the grand father of S.

35. How is W related to P?

- (1) Son
- (2) Cannot be determined
- (3) Grandson
- (4) Aunt
- (5) Uncle

Solution:2

(2) T is the daughter – in – law of W. P is the brother of J. J is the father of T. P is the uncle of T. The sex of W is not known

36. If in the word ISOLATE, all the consonants are replaced by the previous letter in the alphabet and all the vowels are replaced by the next letter and then all the letters are arranged alphabetically, which letter will be third from the right end?

- (1) Q
- (2) P
- (3) Other than those given as options
- (4) N
- (5) B

Solution:2

36. (2)

I	S	O	L	A	T	E
+1↓	-1↓	+1↓	-1↓	+1↓	-1↓	+1↓
J	R	P	K	B	S	F

Alphabetical order of letters :

B F J K P R S

↑
3rd from the
right end

37. If in the number 38564927, first all the even digits are arranged in ascending order and then all the odd digits are arranged in ascending order which digit will be fourth from the right end?
- (1) 3
 (2) 5
 (3) 4
 (4) Other than those given options
 (5) 6

Solution:1

(1) 3 8 5 6 4 9 2 7

According to question,

2 4 6 8 3 5 7 9
 ↑
 4th from the
 right end

38. How many meaningful English words can be made from the letters IMET, using all the letters but each letter only once in each word?
- (1) None
 (2) One
 (3) Three
 (4) Four
 (5) Two

Solution:4

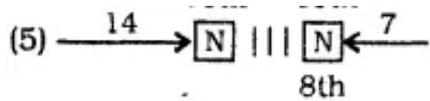
(4) Meaningful words ⇒ TIME,

EMIT, ITEM, MITE

→
 15th 19th _

39. In a row of children facing north, Neeta is fifteenth from the left end of the row. If she is shifted towards the right end of the row by four places, she becomes eighth from the right end. How many children are there in the row?
- (1) 24
 (2) 28
 (3) Other than those given as options
 (4) 27
 (5) 26

Solution:5



Total number of children in the row
 $= 19 + 8 - 1 = 26$

40. **Statement :**

The ministry of aviation has ordered to procure 35 new aircraft to be added to the existing fleet this year.

Which of the following most appropriately proves that the decision taken by the aviation minister is unrealistic and not based on scientific projections?

- (1) A recent survey showed that the existing aircraft in the fleet fail to match the international standards and quality norms.
- (2) These new aircraft have better technology and greater number of seats as compared to ones already existing in the fleet.
- (3) The neighbouring country which also procured aircraft lacked enough number of trained pilots.
- (4) As the number of passengers has declined significantly this year, the existing fleet is not being used to its full potential.
- (5) As many as 12 pilots are not on flying duties for two straight weeks due to lack of sufficient aircraft to ply on the routes.

Solution:4

(4) Obviously, option (4) most appropriately proves that the decision taken by the aviation minister is unrealistic as the existing fleet is not being used for lack of passengers.

Directions (41-45) : Study the following information carefully and answer the questions given below :

M, T, D, F, H, R and W are seven students studying in three different colleges I, II and III with at least two in each college. Each of them has a favourite subject from English, History, Geography, Mathematics, Physics, Chemistry and Biology, not necessarily in the same order. D's favourite subject is Physics and studies in College II with only M. H does not study in college I and he likes English. F studies in College III and does not like Mathematics. Those who like Geography and Chemistry study in the same college. W likes Biology and does not study in College I. R does not study with H. R does not like Chemistry. M does not like History.

41. What is favourite subject?

- (1) Geography
- (2) Chemistry
- (3) Data Inadequate
- (4) Mathematics
- (5) Other than those given as options

Solution:4

(41-45) :

Student	College	Subject
M	II	Mathematics
T	I	Chemistry
D	II	Physics
F	III	History
H	III	English
R	I	Geography
W	III	Biology

41. (4) M's favourite subject is Mathematics.

42. In which college do three of them study ?
- (1) I
 - (2) III
 - (3) II
 - (4) Data Inadequate
 - (5) II or III

Solution:2

(2) Three students study in College III.

43. Which of the following groups of students studies in college III?
- (1) FTR
 - (2) FWR
 - (3) FM
 - (4) Data Inadequate
 - (5) Other than those given as options

Solution:5

(5) F, H and W study in College III.

44. What is T's favourite subject?

- (1) Chemistry
- (2) Biology
- (3) Mathematics
- (4) Data Inadequate
- (5) Other than those given as options

Solution:1

(1) T's favourite subject is Chemistry.

45. Which of the following groups of students study in college I?

- (1) TH
- (2) HR
- (3) TR
- (4) HF
- (5) Other than those given as options

Solution:3

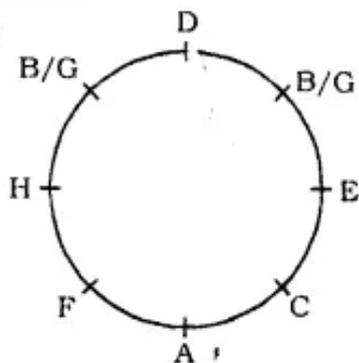
(3) R and T study in College I

46. Eight friends A, B, C, D, E, F, G and H are sitting around a circle facing the centre. D is sitting between B and G. F is sitting between A and H. E is at second place right to A. What is the position of A?

- (1) Left to F
- (2) Right of F
- (3) Between E and F
- (4) Cannot be determined
- (5) Other than those given as options

Solution:2

(2)



A is to the immediate right of F.

Directions (47-50) : Study the following information carefully and answer the questions given below :

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

Input : talk 47 12 rise at 99 75 32 wise joke high 28 56 be

Step I : 12 talk 47 rise 99 75 32 wise joke high 28 56 be at

Step II : 28 12 talk 47 rise 99 75 32 wise joke high 56 at be

Step III : 32 28 12 talk 47 rise 99 75 wise joke 56 at be high

Step IV : 47 32 28 12 talk rise 99 75 wise 56 at be high joke

Step V : 56 47 32 28 12 talk 99 75 wise at be high joke rise

Step VI : 75 56 47 32 28 12 99 wise at be high joke rise talk

Step VII : 99 75 56 47 32 28 12 at be high joke rise talk wise

Step VII is the last step of the above rearrangement as the desired arrangement is obtained.

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

Input : 83 why sat 14 32 no be ink feet 50 27 vain 67 92

47. Which step number is the following output?

32 27 14 83 why sat no 50 vain 67 92 be feet ink

(1) Step V

(2) Step VI

(3) Step IV

(4) Step I

(5) Other than those given as options

Solution:5

Q. No. 47 – 50

After careful analysis of the input and various steps of rearrangement, it is evident that in each step two elements (one word and one number) are rearranged. In the first step the lowest number moves to the extreme left position and the word which comes first in the alphabetical order moves to the extreme right position. In the second step, the second lowest number moves to the extreme left position while the word which comes second in the alphabetical order moves to the extreme right position. The same procedure is continued till all the numbers get rearranged in descending order and all the words get rearranged in alphabetical order after the numbers.

Input : 83 why sat 14 32 no be ink feet 50 27 vain 67 92

Step I : 14 83 why sat 32 no ink feet 50 27 vain 67 92 be

Step II : 27 14 83 why sat 32 no ink 50 vain 67 92 be feet

Step III : 32 27 14 83 why sat no 50 vain 67 92 be feet ink

Step IV : 50 32 27 14 83 why sat vain 67 92 be feet ink no
Step V : 67 50 32 27 14 83 why vain 92 be feet ink no sat
Step VI : 83 67 50 32 27 14 why 92 be feet ink no sat vain
Step VII : 92 83 67 50 32 27 14 be feet ink no sat vain why
47. (5) This is the Step III.

48. Which word/number would be at fifth position from the right in Step V?

- (1) 14
- (2) 92
- (3) feet
- (4) be
- (5) sat

Solution:4

(4) The element 'be' is at the fifth position from the right in the Step V.

49. How many elements (words or numbers) are there between 'feet' and '32' as they appear in the last step of the output?

- (1) One
- (2) Three
- (3) Four
- (4) Five
- (5) Two

Solution:2

(2) There are three elements (27, 14, be) between '32' and 'feet' in the last Step.

50. Which of the following represents the position of 'why' in the fourth step?

- (1) Eighth from the left
- (2) Fifth from the right
- (3) Sixth from the left
- (4) Fifth from the left
- (5) Sixth from the right

Solution:3

(3) The element 'why' is at the sixth position from the left In the Step IV.