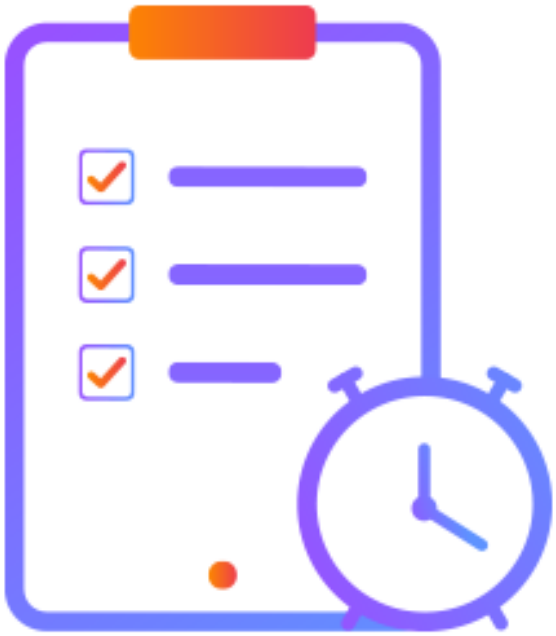
BYJU'S EXAM PREP



SNAP 2022 : Mock Test 4

Mock Test Questions & Solutions

Mock Test Solutions in English

Questions

1. The given sentences have been divided into four parts that have been marked A, B, C, and D. Choose the option that contains the part with an error as your answer.

   As much as eighty percent A. / of the students were absent B. / yesterday and the teacher had no option (C. / but to call off the class. D. / No error (e)

   A. a
   B. b
   C. c
   D. d

2. In which part of speech is the word ‘more’ used in the sentence below?

   Tell me more.

   A. Adverb
   B. Pronoun
   C. Adjective
   D. Noun

3. The given sentences have been divided into four parts that have been marked A, B, C, and D. Choose the option that contains the part with an error as your answer.

   The history of mankind A. / is replete with episodes of injustice B. / wherein we see kings treating poor C. / like mere sources of taxes and nothing else. D. / No error (e)

   A. a
   B. b
   C. c
   D. d

4. Fill in the blanks with the most appropriate word/phrase from the given options.

   He has a reputation of carrying tales and rumours, so everyone in the office gives him _____.

   A. a long rope
   B. a wet blanket
   C. a wide berth
   D. a long ride

5. Identify the part/s of speech of ‘running’ as used in the two instances:

   He loved running (1) in still water and sitting still in running (2) water.

   A. 1. Verb, 2. Verb
   B. 1. Adjective, 2. Noun
   C. 1. Noun, 2. Adjective
   D. 1. Verb, 2. Adverb

6. Fill in the blanks with the most appropriate question tag.

Shree would rather leave than get humiliated, _____?

A. haven't she
B. shouldn't she
C. wouldn't she
D. didn't she

7. Choose the option with the correct spelling.

A. Laison
B. Indictment
C. Phlematic
D. Aqiuesce

8. Fill in the blank with the option that completes the sentence correctly.

Inflation is high, and we need to manage it by _____.

A. building bridges
B. learning the ropes
C. cutting corners
D. tightening our belts

9. Choose the option that corrects the underlined part of the sentence in the best way.

Working as an occupational therapist on site, a block of wood was placed in each of the man's hands by Evan.

A. a block of wood was placed in each of the patient's hands by Evan
B. Evan placed a block of wood in each hand of the patient
C. Evan placed each block of wood in his patient's hands
D. a block of wood each was placed in the patient's hands

10. Choose the option that corrects the underlined part of the sentence in the best way.

Notwithstanding its deep cultural and ethnic ties with the Nepalese people, the scale of India's economic involvement cannot be compared to China.

A. the scale of India's economic involvement cannot be compared to China
B. India's economic involvement scale cannot be compared to China
C. the scale of India's economic involvement cannot be compared to that of China's
D. the scale of Indian economic involvement cannot be compared with China

11. What is the antonym of the word 'impoverished'?

A. Destitute
B. Tragic
C. Rich
D. Poor

12. The given sentences have been divided into four parts that have been marked A, B, C, and D. Choose the option that contains the part with an error as your answer.

People like Aristotle have left their footprints A. / on the sand of time, and it is not surprising that B. / his ideas are still relevant C. / so many centuries after his demise. (d)

A. A
B. B
C. C
D. D

13. The given sentences have been divided into four parts that have been marked A, B, C, and D. Choose the option that contains the part with an error as your answer.

She was a lovely, A. / large-hearted woman B. / and we admired her, C. / for her kindness. (D)

A. A
B. B
C. C
D. D

14. Fill in the blanks with the most appropriate word/phrase from the given options.

I realised that the boy was trying to _____ about his parents being out of town.

A. paint the town red
B. take the bull by the horns
C. be between the Alpha and the Omega
D. spin me a line

15. The given sentences have been divided into four parts that have been marked A, B, C, and D. Choose the option that contains the part with an error as your answer. The old gentleman had a tough day at work A. / and still had to deal with B. / the illogical demands of his son-in-laws, C. / who were after his money. D. / No error (e)

A. a
B. b
C. c
D. d

16. In a certain code language, 234 means ‘my dog died’, and ‘143’ means ‘I have cat’. Which of the following is the code for ‘you humble animals’?

A. 345
B. 102
C. 589
D. 367

17. In the following question, a sequence has been given with a missing term. Select the right alternative that completes the sequence.

APV, BQW, CRX, DSY, ?

A. DFJ
B. ETZ
C. ESY
D. SKI

18. **Direction:** A statement is followed by 2 arguments. Identify which of the arguments are strong, and mark according to the given code.

Statement: Should child marriages be discouraged?

Arguments:

I: Yes; children are not mature enough physically and mentally for marriage.

II: No; parents always decide the best for their children.

A. I is strong.
B. II is strong.
C. Both are strong.
D. Neither is strong.

19. In the following number series, only one number is wrong. Find out the wrong number.
49, 25, 13, 7, 4, 3 .5

A. 4
B. 25
C. 49
D. 3 .5

20. If EDUCATION is coded as TEMPLE, TEMPLE is coded as PALACE, PALACE is coded as CUPBOARD, CUPBOARD is coded as DESK, and DESK is coded as BED, then where do you keep your clothes?

A. DESK
B. CUPBOARD
C. TEMPLE
D. PALACE

21. A statement is followed by 2 assumptions. Identify which of the assumptions follow, and mark according to the given code.

Statement: For rent or sale of property, contact X—the best in the business.

Assumptions:

I: Where property is concerned, people prefer the best in the business.

II: X may not really be the best in business.

A. Only Assumption I is implicit.
B. Only Assumption II is implicit.
C. Both assumptions are implicit.
D. Neither assumption is implicit.

22. Study the following information, and answer the questions given below:

Point P is 20 m north of point N. Point Y is 20 m south of point Z and 15 m east of point W. Point Q is 10 m west of point N. Point W is 15 m south of point Q. In which direction of point Z is point Q?.

A. North-east
B. South
C. South-west
D. South-east

23. Study the following information and answer the given question:
The teacher rounded up three students Tinku, Minku, and Ginny yesterday as one among them was suspected of stealing Pinki's pen. The three suspects gave the following statements to the teacher:
Tinku: I have not stolen the pen.
Minku: I have not stolen the pen.
Ginny: Minku has stolen the pen.
Who stole Pinki's pen among the three persons if only one of the statements made by the three students was true?

A. Minku
B. Tinku
C. Ginny
D. None of the above

24. A statement is followed by two conclusions. Read the given statements carefully, and identify which of the conclusions directly follow.

Statement:

In order to fight the increasing pollution, the citizens of City X have filed a petition

in the court asking for a ban on all diesel vehicles that are more than 15

years old in the city.

Conclusions:

I. Diesel vehicles are the major pollutants in the city.

II. Citizens of City X are concerned about the growing pollution.

A. Only Conclusion I follows.
B. Only Conclusion II follows.
C. Both conclusions I and II follow.
D. Neither Conclusion I nor Conclusion II follows.

25. Study the following information and answer the questions given below:
Seven people, A, B, C, D, E, F, and G, are sitting in a row but not necessarily in the same order. All are facing the north. A sits second to the left of B. Two people are sitting between B and D, who are not

adjacent to A. E is neither adjacent to B nor A. Neither E nor A sits at any of the ends of the row. Three people are seated between C and F; F is not adjacent to E. Who among the following is/are sitting between A and C?

A. B and G
B. G and E
C. F and D
D. None of the above

26. What will be the day of the week on 15 August 2022?

A. Monday
B. Sunday
C. Tuesday
D. None of the above

27. In the following question, a related pair of words or phrases is followed by four lettered pairs of words or phrases. Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.

Refinement: Purification ::

A. Deflect: Conformity
B. Attenuation: Rarefaction
C. Regenerate: Nourishment
D. Standardise: Disconfirmation

28. Study the following information carefully, and answer the question given below:

For a driver's test, seven people (A, F, M, T, R, O, and Z) who belong to different professions (advocate, chef, coach, dean, farmer, musician, and salesman) are scheduled to take tests on different days of the week from Monday to Sunday, but not necessarily in the same order.

T's test is scheduled immediately after the day on which the advocate's test is scheduled. The farmer takes the test immediately after the day on which the dean takes the test. Three tests are scheduled between the tests of M and F, and neither of them takes the test on Saturday. The musician's test is scheduled immediately after O's test. R is a farmer, and his test is scheduled on Friday. The salesman and the coach have tests that are scheduled on consecutive days. Four tests are scheduled between the days on which the tests of O and A are scheduled, and O's test is scheduled before A's test. Z is not the dean. Neither M nor A is the coach.

Who amongst the following is the advocate?

A. O
B. Z
C. M
D. T

29. In the following question, a related pair of words or phrases is followed by four lettered pairs of words or phrases. Select the lettered pair that best expresses a relationship similar to that expressed in the original

pair.

ABSORB: SPONGE::

A. Whirl: Wool
B. Wash: Detergent
C. Pump: Gasoline
D. Seal: Caulk

30. Select the letter cluster that can replace the question mark (?) in the following series:

SOB, VRE, YUH, ?, EAN

A. BXK
B. AYK
C. AXK
D. BXL

31. In the following number series, only one number is wrong. Find out the wrong number.

101.44, 101.69, 101.96, 102.16, 102.56

A. 102.16
B. 101.96
C. 101.69
D. 101.44

32. A watch, which was set right at 9 a.m., gains 15 seconds in 3 minutes. What time will it show at 1 p.m. on the same day?

A. 12:30 p.m.
B. 1:20 p.m.
C. 1:30 p.m.
D. None of the above

33. In the following question, a statement is followed by two courses of action that are numbered I and II. Assume everything in the statement to be true; on the basis of the information given in the statement, decide which of the suggested courses of action logically follow(s) for pursuing and then select the correct option.

Statement:

Kate lives on the first floor of a building. She is not able to concentrate on her work because of the noise coming from the second floor of her building, where a 5-year-old kid plays all day.

Courses of action:

I. Kate should talk to the parents of the kid and ask them to resolve the problem.

II. Kate should lock the kid in a room till the time he apologises for the excess noise.

A. Only I follows.
B. Only II follows.

C. Neither I nor II follows.
D. Both I and II follow.

34. If today is Thursday, then what will be the day of the week after 166 days?
A. Friday
B. Tuesday
C. Sunday
D. Monday

35. A, B, M, N, P, and S are working in a multinational company. Three of them must be selected for a foreign tour. The conditions to be met for the selection are as follows:

1) N will refuse to go if S is selected.

2) M will go only if P is selected and vice-versa.

3) A can go with anybody.

4) B must be selected as he knows almost every foreign language.

If S must be selected for the tour, then who among the following will go for the tour?
A. M
B. P
C. N
D. A

36. **Direction:** Some information is provided in the paragraph below. Answer the questions based on this information.

A number arrangement machine, when given a particular input, rearranges it using a particular rule as shown below.

Input: 2537, 2764, 5364, 5273, 4931

Step I: 2357, 2467, 4635, 2357, 4139

Step II: 8, 10, 9, 8, 4

Step III: 64, 100, 81, 64, 16

Step IV: 10, 1, 9, 10,7

Step V: 1, 7, 9, 10, 10

Step V is the last step or the final output of the above input. As per the rules followed in the given steps, find out the steps for the given input.

Input: 3526, 3478, 4235, 5341, 5263

What will be the sum of the third and the fourth numbers in step IV?

A. 16
B. 18
C. 20
D. 24

37. In the following question, two statements that are numbered I and II are given. There may be a cause-and-effect relationship between the two statements. These two statements may be the effect of the same cause or independent causes. These statements may be independent causes without having any relationship. Based on the relationship between the two statements, select the correct alternative.

Statement I: The people of Nainital are very fit.

Statement II: Nainital is a popular tourist destination.

A. Statement I is the cause, and statement II is its effect.
B. Statement II is the cause, and statement I is its effect.
C. Both the statements I and II are independent causes.
D. Both the statements I and II are independent effects.

38. Direction: Study the data carefully and answer the questions accordingly.

There are eight members in a family with two generations. The number of females is less than the number of males. K is the son-in-law of P. Z is the father of U and G. T does not have any children, and T's nephew G is married to S. M is the brother-in-law of K. Z does not have a sibling and is the father-in-law of S.

Three of the following four are similar in a certain way and form a group. Who is the one that does not belong to that group?

A. T
B. Z
C. M
D. S

39. How is K related to U?

A. Husband
B. Son
C. Father
D. Uncle

40. In the following question, two statements that are numbered I and II are given. There may be a cause-and-effect relationship between the two statements. These two statements may be the effect of the same cause or independent causes. These statements may be independent causes without having any relationship. Based on the relationship between the two statements, select the correct alternative.

Statement I: Neena is a healthy girl.

Statement II: Neena lives in a joint family with doting parents and grandparents.

A. Statement I is the cause, and statement II is its effect.
B. Statement II is the cause, and statement I is its effect.
C. Both the statements I and II are independent causes.
D. Both the statements I and II are independent effects.

41. A trader sells an item by marking its price 25% higher than the rate at which he bought it. However, as the balance is faulty, he makes a profit of 11.11%. What would the balance read if a weight of 900 grams is placed on it?

A. 750
B. 800
C. 850
D. 700

42. In an equilateral triangle ABC, line AD is drawn perpendicular to BC . Find the ratio of the perimeter of triangle ABD to the perimeter of equilateral triangle ABC .

A. $2\sqrt{3}$: ($\sqrt{3}$ + 1)
B. ($\sqrt{3}$ + 1) : $2\sqrt{3}$
C. ($\sqrt{3}$ + 1) : $3\sqrt{3}$
D. Cannot be determined

43. What is the least number that must be added to each of a pair of numbers that are in the ratio 7 : 16 such that the ratio between the terms becomes 13 : 22?

A. 4
B. 5
C. 6
D. 7

44. A bag contains violet, blue, green, and indigo coloured balls. The number of these balls in the bag is p, (p + 2), (p – 4), and (p + 3), respectively. If the probability of randomly drawing one indigo ball from the bag is $\frac{1}{3}$, then what will be the probability of randomly drawing two blue balls from the bag?

A. $\frac{15}{176}$
B. $\frac{17}{176}$
C. $\frac{13}{176}$
D. $\frac{19}{176}$

45. If $\log_{10}22 = k$, then $log_{10}\frac{10}{330}$ is equal to:

A. $-k + \log_{10}\frac{3}{2}$ B. $k + \log_{10}\frac{3}{2}$

C. $\log_{10}\frac{2}{3} - k$ D. $\log_{10}\frac{2}{3} + k$

46. Working alone, Chetan takes 12 days less than that taken by Dheeraj to complete the same work. If both of them work together, then the work gets completed in 14.4 days. With the help of Esha, if they completed the work in 10 days, then find the number of days required by Esha to complete the work alone.

A. 24 days B. $\frac{340}{11}$ days

C. 30 days D. $\frac{360}{11}$ days

47. If $m^p = n^q = l^r$, where p, q, and r are different positive numbers and m, n, and l are in GP, then which of the following is true?

A. $\frac{1}{p} + \frac{1}{r} = \frac{1}{q}$ B. $\frac{1}{p} + \frac{1}{r} = \frac{2}{q}$

C. $\frac{1}{p} + \frac{1}{q} = \frac{2}{r}$ D. $\frac{1}{p} + \frac{1}{q} = \frac{1}{r}$

48. A function f(x) is equal to $x^2 - 7x - 43$. If f(x) is non-negative, find the sum of all the positive integral values of 'x' that satisfies the equation $(f(x))^{(2x^2 - 8x + 6)} = 1$.

A. 15 B. 11

C. 19 D. 13

49. A bike rider sees a car 50 metres ahead of it. After 2.5 minutes, the bike is 25 metres ahead of the car. Find the speed of the bike (in m/min) if the car is travelling at a speed of 30 m/min.

A. 40 B. 50

C. 60 D. 70

50. The edges of a cuboid are in the ratio 25 : 24 : 7. The length of the longest rod that can be placed inside the cuboid is $50\sqrt{2}$cm. If this cuboid is melted and recast into a cube, what will be the length of the edge of the cube? (Assume that no material is wasted during the recasting process.)

A. $2\sqrt[3]{525}$ cm B. $4\sqrt[3]{525}$ cm

C. $8\sqrt[3]{525}$ cm D. $2\sqrt[3]{625}$ cm

51. A grandfather gave a collection of less than 80 toffees to his grandchildren, A and B . If A gives a certain number of toffees to B, then B would have 5 times as many toffees as A . Instead, if B gives the same number of toffees to A, then B would have 4 times as many toffees as A . The number of toffees with A and B together can be:

A. 65
B. 50
C. 55
D. 60

52. The cost of a chocolate is three times that of a cookie. The cost of the cookie is four times that of a candy. If the cost of the chocolate increases by 10%, the cost of the cookie increases by 20%, and the cost of candy increases by 25%. Find the approximate percentage increase in the cost of 20 chocolates, 20 cookies, and 20 candies.

A. 9%
B. 10%
C. 12%
D. 13%

53. If four dice are rolled simultaneously, find the probability that the sum of the numbers obtained is more than 20 .

A. $\frac{29}{1296}$
B. $\frac{31}{1293}$
C. $\frac{35}{1296}$
D. $\frac{29}{1293}$

54. Three taps P, Q, and R can fill a tank individually in 15 hours, 30 hours, and 45 hours, respectively. At first, all the taps are opened simultaneously. After 3 hours, tap R is closed and after another 3 hours, tap Q is closed. Tap P is kept open till the tank gets completely filled. What fraction of the tank is filled by tap P?

A. $\frac{11}{15}$
B. $\frac{13}{15}$
C. $\frac{11}{16}$
D. $\frac{13}{16}$

55. If $x^2 + x + 1 = 0$, then find the value of the expression $\frac{1}{3}(x^{31} + x^{32} + x^{33} + x^{34} + x^{35})$.

A. $-\frac{1}{2}$
B. 1
C. $-\frac{1}{3}$
D. $\frac{1}{2}$

56. Launched by a bank, scheme A offered 10% of compound interest per annum, interest being compounded annually. Ramesh deposited Rs. 16000 in the bank for three years in the above scheme. The bank tried to cheat Ramesh and offered 10% compound interest for the first two years and paid simple interest on the original amount for the third year at the same rate of interest. If Ramesh was unable to notice this, then approximately what percentage of the actual amount that he was supposed to receive was received by him?

A. 98.5%
B. 98%
C. 97.5%
D. 97%

57. The number of sides (n) of a regular polygon is one-sixth of the number of its diagonals. Find the number

of diagonals of a polygon whose side is 2n.

A. 350 B. 405

C. 450 D. 375

58. There is a set of 6 distinct natural numbers whose average is 96 . The smallest number lies in the set {p | p is a natural number multiple of 24} and the largest number lies in the set {q | q is a natural number multiple of 14}. Which of the following cannot be the average of the remaining four numbers?

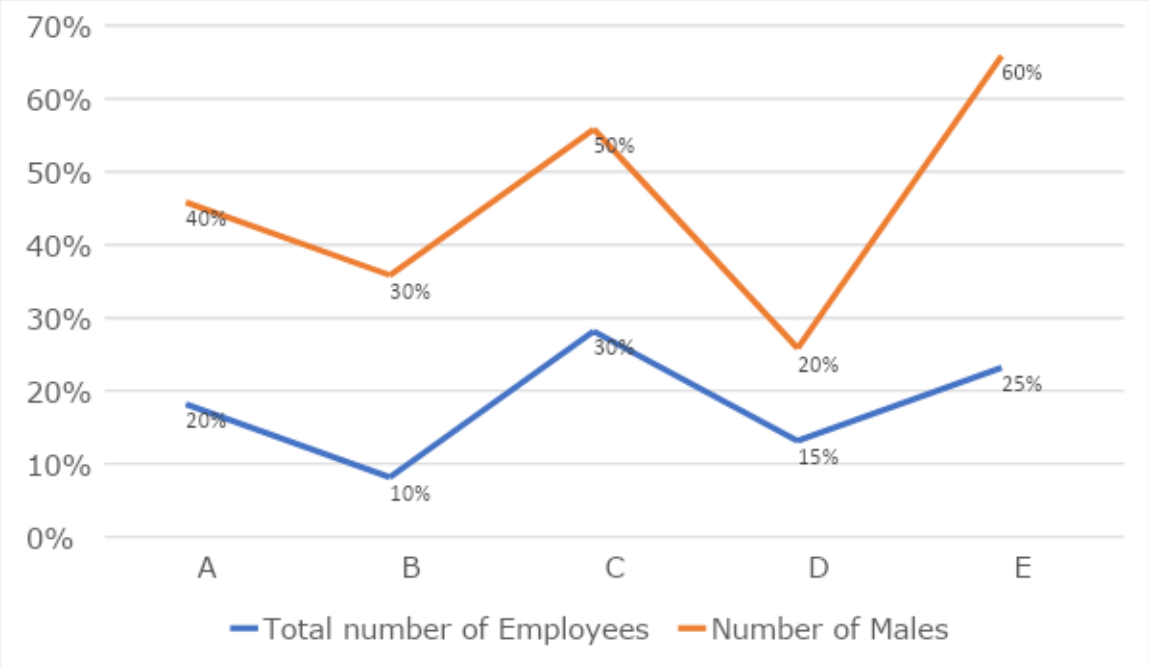
A. 43.5 B. 78.5

C. 99.5 D. 106.5

59. **Directions:** Study the following information carefully to answer the questions given below.

The following line graph shows the percentage distribution of the number of employees in five different companies, viz., A, B, C, D, and E . The line graph also shows the percentage of the number of male employees in these five companies.

Total number of employees in these five companies = 8000



The number of female employees in company D is approximately what percent of the number of male employees in company A?

A. 100% B. 150%

C. 66.67%

D. 125%

60. A fruit seller mixed three types of apples costing Rs. 14 per kg, Rs. 20 per kg, and Rs. 24 per kg and sold the mixture at Rs. 18 per kg at 25% profit. Which of the following represents a possible ratio of the quantities of the varieties mixed?

A. 49 : 1 : 1

B. 52 : 2 : 1

C. 63 : 1 : 2

D. 75 : 1 : 3

Solutions

1. A

Sol. It should be ‘many’ instead of ‘much’ as we are speaking about students, which is plural.

2. B

Sol. Here, ‘more’ means an additional amount of a story/matter. It is acting as a pronoun.

3. C

Sol. The word ‘poor’ is primarily an adjective, but when used like a ‘noun’ (as done in this case) it should always be preceded by ‘the’ and should be treated as plural.

4. C

Sol. To give someone ‘a wide berth’ means to avoid someone. So, it is the correct expression here.

5. D

Sol. A answers the question ‘what’ and names the activity that he loved, so it is a noun. B describes the noun ‘water’, so it is an adjective.

6. C

Sol. Since the model being used here is ‘would’, the question tag would also consist of the same model. Hence, option C is the right answer.

7. B

Sol. B is the correct answer as the spelling of ‘indictment’ is correct. The correct spellings of the other words are as follows:

- Liaison
- Phlegmatic
- Acquiesce

8. D

Sol. ‘Tightening the belt’ means to reduce expenses or make financial sacrifices.

9. B

Sol. Try to understand the meaning of the sentence to identify the error or errors.
The original sentence has a modifier error.

The sentence starts with the modifier 'working as an occupational therapist'. It needs to be followed by the subject, i.e., the person who was working as an occupational therapist. So, Evan has to follow the modifier.
Between options B and C, where the modifier is followed by the correct subject, B is correct. C is incorrect as it changes the meaning of the sentence as 'each block of wood' means something different from putting a block of wood in each hand.
Hence, B is the correct answer.

10. C

Sol. The given statement intends to compare the scale of India's economic involvement to the scale of China's economic involvement.
According to the rules of sentence construction and parallelism, comparisons have to be expressed in a logical and parallel manner.
The given sentence is incorrect as the scale of India's economic involvement is compared to the country China, which is not logical.
Option C expresses the comparison correctly, both in terms of logic and parallel structure.
Hence, C is the correct answer.

11. C

Sol. Impoverished refers to a person who is very poor. Hence, option C is the correct antonym here.

12. B

Sol. The standard form of the noun-phrase is 'sands of time', and it is used to refer to the passage of time.

13. C

Sol. No comma is required between 'we admired her' and 'for her kindness'. It is not incorrect to separate two adjectives using commas instead of an 'and'. The usage of semicolon is also correct as it can be used to separate the clauses of a compound sentence when they contain a comma.

14. D

Sol. To 'spin a line' means to tell a lie.

15. C

Sol.

The plural of ‘son-in-law’ is ‘sons-in-law’, not ‘son-in-laws’.

16. D

Sol.

Each number represents the number of letters present in the corresponding word. For instance, ‘my’, ‘dog’, and ‘died’ have 2, 3, and 4 letters. Hence, the code is 234.
Similarly, ‘i have cat’ is coded as ‘143’.
Therefore, ‘you humble animals’ would be coded as ‘367’.
Hence, option D is the correct answer.

17. B

Sol. Three different sequences are merged into the sequence given above.
The first letters of each combination belong to the first sequence.
A, B, C, D, ?
Hence, the first letter of the missing term is E.
The second letters represent the second sequence.
P, Q, R, S, ?
Thus, the second letter of the missing term is T.
Similarly, the third sequence is V, W, X, Y, ?
The missing term would be Z.
Therefore, ETZ is the required answer.
Hence, option B is the correct answer.

18. A

Sol. Argument I is strong as the children are not mature enough to get married, and child marriages should be discouraged. Argument II is a weak argument because it is merely a claim and is not an argument substantiated with facts.

19. D

Sol.

The pattern of the series is as follows:

$(49 + 1) \div 2 = 25$

$(25 + 1) \div 2 = 13$

$(13 + 1) \div 2 = 7$

$(4 + 1) \div 2 = 2.5$

So, the incorrect term is 3.5.

Hence, option D is the correct answer.

20. A

Sol.

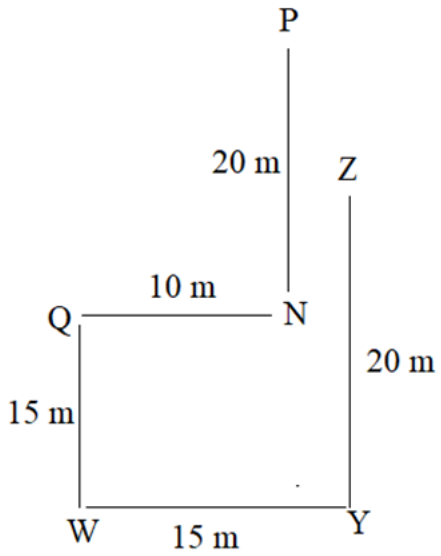
Clothes are kept in cupboards, and 'CUPBOARD' is coded as 'DESK'. Hence, option A is the correct answer.

21. A

Sol. Assumption I is an implicit statement because the assumption that people prefer the best when property is concerned forms the basis of the statement. Otherwise, there is no point talking about anyone being the best in the business.

22. C

Sol. From the given data, we can construct a direction diagram as given below:



Therefore, option C is the correct answer.

23. B

Sol. Let's assume that Minku stole the pen.
So, we can see that Tinku's statement is true. But the statement given by Minku is a lie. The statement given by Ginny is also true as he/she is pointing towards Minku as the one who stole the pen. Two statements are true here; this is a violation of the given condition. So, Minku did not steal the pen.
Let's assume that Tinku stole the pen.
Then, except Minku's statement, the remaining two statements become false. So, Tinku is the one who stole the pen.
Let's assume that Ginny stole the pen.
Then, except Ginny's statement, the remaining two statements become true. This is a contradiction. So, Ginny is not the one who stole the pen.

24. B

Sol. We cannot say that diesel vehicles are the major pollutants in the city. Thus, I cannot be concluded. II is a correct conclusion because the citizens have filed a petition for the ban.

25. A

Sol.

A sits second to the left of B.

A _ B

Two people are sitting between B and D, who are not adjacent to A.

A __ B __ __ D

E is adjacent to neither B nor A.

Case I: A __ B __ __ D E

Case II: A __ B __ E D

Neither E nor A sits at the end of the row.

Hence, case I is eliminated.

Thus, __ A __ B __ E D

Three people are seated between C and F; F is not adjacent to E.

F A __ B C E D

Therefore, the final arrangement is as belows:

F A G B C E D

Hence, only B and G sit between A and C.

26. A

Sol.

15 August 2022 = (2021 years + Period between 1 January 2022 to 15 August 2022)

Odd days in 2000 years = 0

21 years = (5 leap years + 16 non-leap years)

Number of odd days in 21 years (from 2000 to 2021)

= $(2 \times 5 + 16 \times 1)$ = (10 + 16) = 26 odd days = 3 weeks 5 days = 5 odd days

Number of days from 1 January 2022 to 15 August 2022 = (3 + 0 + 3 + 2 + 3 + 2 + 3 + 1) = 17 days

Thus, 17 days = (2 weeks + 3 days) = 3 odd days

Total number of odd days = (5 + 3) = 8 = 1 week 1 day (1 odd day)

Therefore, the day of the week on 15 August 2022 will be Monday.

Hence, option A is the correct answer.

27. B

Sol. The meaning of the difficult words given in the answer options are as follows:

‘Attenuate’ means to reduce in strength.

‘Rarefaction’ means decrease in density of something.

‘Dilate’ means become wider.

‘Retrenchment’ means reduction or cutting of expenses.

‘Purification’ is to ‘refinement’. Similarly, ‘rarefaction’ is to ‘attenuation’.

‘Nourishment’ is not ‘regeneration’. All the other options can be eliminated.

28. C

Sol.

R is a farmer, and his test is scheduled on Friday.

The farmer takes the test immediately after the day on which the dean takes the test.

Day	Person	Profession
Monday		
Tuesday		
Wednesday		
Thursday		Dean
Friday	R	Farmer
Saturday		
Sunday		

Three tests are scheduled between the tests of M and F, and neither of them takes the test on Saturday.

Day	Person	Profession
Monday		
Tuesday		
Wednesday	M/F	
Thursday		Dean
Friday	R	Farmer
Saturday		
Sunday	F/M	

Four tests are scheduled between the days on which the tests of O and A are scheduled, and O’s test is scheduled before A’s test. The musician’s test is scheduled immediately after O’s test.

Day	Person	Profession
Monday	O	
Tuesday		Musician
Wednesday	M/F	
Thursday		Dean
Friday	R	Farmer
Saturday	A	
Sunday	F/M	

The salesman and the coach have their tests scheduled on consecutive days.

Neither M nor A is the coach.

Day	Person	Profession
Monday	O	
Tuesday		Musician
Wednesday	M	
Thursday		Dean
Friday	R	Farmer
Saturday	A	Salesman
Sunday	F	Coach

Z is not the dean.

T's test is scheduled immediately after the day on which the advocate's test is scheduled.

Day	Person	Profession
Monday	O	Chef
Tuesday	Z	Musician
Wednesday	M	Advocate
Thursday	T	Dean
Friday	R	Farmer
Saturday	A	Salesman
Sunday	F	Coach

Thus, M is the advocate.

Hence, option C is the correct answer.

29. D

Sol. The meaning of the difficult words given in the answer options are as follows:

'Whirl' means turn in a twisting or spinning motion.

'Caulk' means a sealant

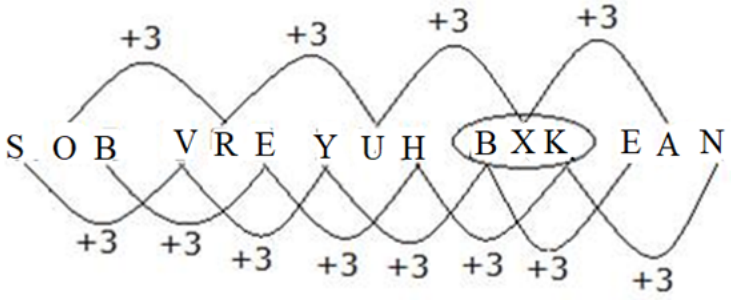
A sponge absorbs. Similarly, a sealant seals. Hence, option D is the correct answer.

A detergent is used to clean. Water is used for washing. Similarly, the pencil does not sharpen.

The other options can be easily eliminated.

30. A

Sol. The pattern of the letter series is shown below:



Hence, option A is the right answer.

31. A

Sol.

The pattern of the series is as follows:

$100 + (1.2)^2 = 100 + 1.44 = 101.44$

$100 + (1.3)^2 = 100 + 1.69 = 101.69$

$100 + (1.4)^2 = 100 + 1.96 = 101.96$

$100 + (1.5)^2 = 100 + 2.25 = 102.25$

$100 + (1.6)^2 = 100 + 2.56 = 102.56$

Thus, 102.16 is the wrong term.

Hence, option A is the correct answer.

32. B

Sol.

The watch gains 15 seconds in 3 minutes.

So, the watch will gain 300 seconds in 60 minutes or 1 hour.

Number of hours from 9 a.m. to 1 p.m. on the same day = 4 hours

In 4 hours, the watch would have gained 1200 seconds or 20 minutes.

So, when the correct time is 1 p.m., the watch would show 1:20 p.m.

Hence, option B is the correct answer.

33. A

Sol. I follows because talking to the parents is a good idea as telling a kid to resolve the problem might not help. II does not follow because locking up the kid is violent and extreme. Hence, the correct answer is option A.

34. B

Sol.

Each day of the week is repeated after 7 days.

166 days = 23 weeks 5 days = 5 odd days

So, it will be 5 days after Thursday, which is a Tuesday after 166 days.

Hence, option B is the correct answer.

35. D

Sol. 1) N will refuse to go if S is selected.

4) B must be selected as he knows almost every foreign language.

Two people, S and B, have to be selected.

2) M will go only if P is selected and vice-versa.

Thus, M and P will not be selected as only one person is left to select; S and B are already selected.

Therefore, A will be the third member.

Hence, option D is correct.

36. C

Sol. Step I: In this step, all even digits are arranged in ascending order from left to right and then all odd digits are arranged in ascending order from left to right.

Step II: In this step, we take the sum of the middle two digits of numbers in step I.

Step III: In this step, we take the square of the numbers in step II.

Step IV: In this step, we take the sum of all the digits in step III.

Step V: In this step, all numbers are arranged in ascending order from left to right from step IV.

Input: 3526, 3478, 4235, 5341, 5263
Step I: 2635, 4837, 2435, 4135, 2635
Step II: 9, 11, 7, 4, 9
Step III: 81, 121, 49, 16, 81
Step IV: 9, 4, 13, 7, 9
Step V: 4, 7, 9, 9, 13
Required sum of digits = 13 + 7 = 20
Hence, option C is correct.

37. D

Sol. Both statements are about Nainital, but there is no cause-and-effect relationship between the two as one is about the general fitness of the people of Nainital and the second is about the beauty of the place.
Thus, both are independent effects.
Hence, the correct answer is option D.

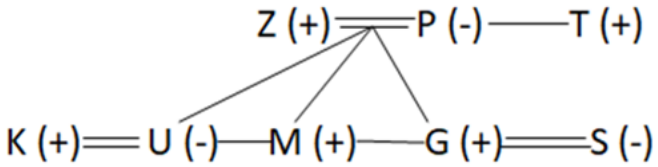
38. D

Sol.

K is the son-in-law of P. So, P's daughter must be married to K.
Z is the father of U and G. Since there are only two generations, there must be a relation between P and Z.
T does not have any children, and T's nephew G is married to S.
So, P and Z must be married. G must be a male, and S must be a female.
M is the brother-in-law of K. So, K and U must be married.

Z does not have a sibling and is the father-in-law of S. So, P and T are siblings.

Symbol	Relation
+	Male
-	Female
———	Sibling
═══	Couple
|	Child



From the above arrangement, T, Z, and M are males, while S is a female.

Thus, S does not belong to the group.

Hence, option D is the correct answer.

39. A

Sol. K is the son-in-law of P. So, P's daughter must be married to K.

Z is the father of U and G. Since there are only two generations, there must be a relation between P and Z.

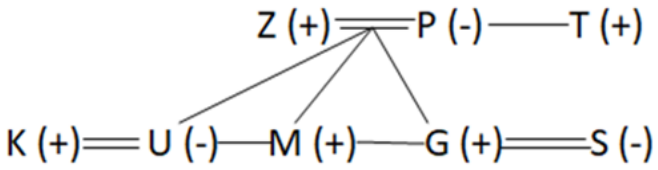
T does not have any children, and T's nephew G is married to S.

So, P and Z must be married. G must be a male, and S must be a female.

M is the brother-in-law of K. So, K and U must be married.

Z does not have a sibling and is the father-in-law of S. So, P and T are siblings.

Symbol	Relation
+	Male
-	Female
———	Sibling
═══	Couple
|	Child



K is the husband of U.

Hence, option A is the correct answer.

40. D

Sol. Both the statements are about Neena, but there is no cause-and-effect relationship between the two. Statement I is about Neena's general fitness and statement II is about her family. Her family might be a reason for her being healthy, but it cannot be definitely concluded as a cause.

Hence, the correct answer is option D.

41. B

Sol. Let the cost price be 'x'.

So, marked price = $\frac{125}{100}x = \frac{5x}{4}$

He makes a profit of only 11.11% as the balance is faulty; this means he must have given a discount to the customer, due to which he gets less profit.

So, SP = $\frac{10}{9} \times x = \frac{10x}{9}$

So, $\frac{10x}{9} = \frac{5x}{4} \times f_d$ [f_d is the discount factor]

$\Rightarrow f_d = \frac{8}{9}$

If 900 grams is placed, the reading will be lesser such that it reduces the value by $\frac{1}{9}$.

So, the balance reads $900 \times \frac{8}{9} = 800$ grams.

Hence, option B is the correct answer.

42. B

Sol. We know that in an equilateral triangle, if a perpendicular is drawn to a side from another vertex of the triangle, then it bisects that side.

Let the side of the equilateral triangle measure '2a' units.

So, the length of perpendicular AD = $\sqrt{3}a$ units

The lengths of the sides AB and BD will be '2a' units and 'a' units, respectively.

Perimeter of triangle ABD = (a + 2a + $\sqrt{3}a$) units = (3a + $\sqrt{3}a$) units

Perimeter of triangle ABC = 2a + 2a + 2a = 6a units

Required ratio = (3a + $\sqrt{3}a$) : 6a = ($\sqrt{3}$ + 1) : $2\sqrt{3}$

Hence, option B is the correct answer.

43. C

Sol. Let's assume that the least number to be added is 'p'; let the pair of numbers be 7x and 16x.

So, according to the question:

$$\frac{7x + p}{16x + p} = \frac{13}{22} \Rightarrow 154x + 22p = 208x + 13p$$

$$\Rightarrow 54x = 9p$$

$\Rightarrow$ p = 6x

So, the least value of p will be obtained when x = 1, so the least value of p is 6.

Hence, option C is the correct answer.

44. A

Sol. Probability of randomly drawing one indigo ball from the bag = $\frac{p+3}{p+p+2+p-4+p+3} = \frac{p+3}{4p+1}$

According to the question:

$$\frac{p+3}{4p+1} = \frac{1}{3}$$

$\Rightarrow$ 3p + 9 = 4p + 1

$\Rightarrow$ p = 8

Number of blue balls in the bag = p + 2 = 10

Total number of balls = 4p + 1 = 33

Required probability = $\frac{^{10}C_2}{^{33}C_2} = \frac{10 \times 9}{33 \times 32} = \frac{15}{176}$

Hence, option A is the correct answer.

45. C

Sol. $\log_{10}22 = k$

Now, $log_{10}\frac{10}{330} = \log_{10}10 - \log_{10}330$

$\Rightarrow log_{10}\frac{10}{330} = 1 - \log_{10}(33 \times 10) = 1 - \log_{10}33 - 1$

$\Rightarrow log_{10}\frac{10}{330} = -\log_{10}33 = -\log_{10}(22 \times \frac{3}{2}) = -\log_{10}22 - \log_{10}\frac{3}{2}$

$\Rightarrow log_{10}\frac{10}{330} = \log_{10}\frac{2}{3} - k$ (because $\log_{10}22 = k$ and $-\log_{10}\frac{b}{a} = \log_{10}\frac{a}{b}$)

Hence, option C is the correct answer.

46. D

Sol. Let the number of days taken by Chetan to complete the work be ‘x’.

So, the number of days taken by Dheeraj to complete the work = x + 12

According to the question:

$\frac{1}{x} + \frac{1}{x+12} = \frac{1}{14.4} = \frac{5}{72}$

$\Rightarrow 72(x + x + 12) = 5(x)(x + 12)$

$\Rightarrow 144x + 864 = 5x^2 + 60x$

$\Rightarrow 5x^2 - 84x - 864 = 0$

Solving the above equation, we get:

x = 24

Let’s assume Esha can complete the work in ‘c’ days.

So, $\frac{1}{24} + \frac{1}{36} + \frac{1}{c} = \frac{1}{10}$

$\Rightarrow \frac{1}{c} = \frac{11}{360}$

So, Esha can complete the work in $\frac{360}{11}$ days.

Hence, option D is the correct answer.

47. B

Sol. Let $m^p = n^q = l^r$ be k.

m = $k^{\frac{1}{p}}$, n = $k^{\frac{1}{q}}$, l = $k^{\frac{1}{r}}$

As m, n, and l are in GP:

So, $n^2 = lm$

$\Rightarrow k^{\frac{2}{q}} = k^{\frac{1}{r}}.k^{\frac{1}{p}} = k^{\frac{1}{r}+\frac{1}{p}}$

So, $\frac{2}{q} = \frac{1}{r} + \frac{1}{p}$

Hence, option B is the correct answer.

48. B

Sol. $(x^2 - 7x - 43)^{(2x^2 - 8x + 6)} = 1$

If $a^b = 1$, then either a = 1 or b = 0

Case I: When $2x^2 - 8x + 6 = 0$

$\Rightarrow x^2 - 4x + 3 = 0$

$\Rightarrow (x - 1)(x - 3) = 0$

$\Rightarrow x = 1$ or $x = 3$

Case II: When $x^2 - 7x - 43 = 1$

$\Rightarrow x^2 - 7x - 44 = 0$

$\Rightarrow x^2 - 11x + 4x - 44 = 0$

$\Rightarrow (x - 11)(x + 4) = 0$

$\Rightarrow x = 11$ or $x = -4$

As f(x) is negative, x = 1 and 3 are not considered.

Required sum = 11

Hence, option B is the correct answer.

49. C

Sol. The bike has travelled a total of 50 + 25 = 75 metres in 2.5 minutes.

So, the relative speed is $\frac{75}{2.5} = 30$ m/min

So, speed of bike – speed of car = 30

$\Rightarrow Speed\ of\ bike = 30 + 30 = 60$ m/min

Hence, option C is the correct answer.

50. B

Sol.

Ratio of the sides of a cuboid = 25 : 24 : 7

Let the length, breadth, and height be 25k, 24k, and 7k, respectively.

Length of the longest rod that can be placed inside the cuboid = $\sqrt{(25k)^2 + (24k)^2 + (7k)^2}$ = 25k$\sqrt{2}$

According to the question:

25k$\sqrt{2}$ = 50$\sqrt{2}$

$\Rightarrow$ k = 2

So, the length, the breadth, and the height of the cuboid are 50 cm, 48 cm, and 14 cm, respectively.

Volume of the cuboid = 50 × 48 × 14 = 33600

So, volume of the cube = 33600

Length of the edge of the cube = $4\sqrt[3]{525}$ cm

Hence, option B is the correct answer.

51. D

Sol. Let the number of toffees with A and B be ‘x’ and ‘y’, respectively.

Let’s assume A gives ‘k’ number of toffees to B.

So, y + k = 5(x – k)

$\Rightarrow$ 5x – y = 6k ...(1)

Also, y – k = 4(x + k)

$\Rightarrow$ 4x – y = –5k …(2)

Eliminate k from both equations,

4x – y = –5($\frac{5x-y}{6}$) $\Rightarrow$ $x = \frac{11}{49}y$

$\Rightarrow$ y = 49, 98, 147,...

Corresponding values of x = 11, 22, 33,…

But x + y < 80

So, the possible number of toffees with A and B together can be 49 + 11 = 60.

Hence, option D is the correct answer.

52. D

Sol. Let the price of a candy be ‘x’.

So, the cost of a cookie = 4x and that of the chocolate = 12x

So, the cost of 20 chocolates, 20 cookies, and 20 candies = 20(12x + 4x + x) = 340x

New increased cost of chocolate = $\frac{110}{100} \times 12x = \frac{66x}{5}$

New increased cost of cookie = $\frac{120}{100} \times 4x = \frac{24x}{5}$

New increased cost of candy = $\frac{125}{100} \times x = \frac{5x}{4}$

So, the increased cost of 20 chocolates, 20 cookies, and 20 candies = 20($\frac{66x}{5} + \frac{24x}{5} + \frac{5x}{4}$) = 20($\frac{385x}{20}$) = 385x

Hence, the required percentage increase = $\frac{385x-340x}{340x} \times 100 = \frac{45x}{340x} \times 100 = 13.23\% \approx 13\%$

Hence, option D is the correct answer.

53. C

Sol. The total number of cases = $6 \times 6 \times 6 \times 6 = 1296$

Favourable cases:

Maximum sum value = 6 + 6 + 6 + 6 = 24

So, $21 \leq$ sum ≤ 24

When sum is 21:

(6, 6, 6, 3); so, no. of cases = $\frac{4!}{3!} = 4\ ways$

(6, 6, 5, 4); so, number of cases = $\frac{4!}{2!} = 12$ ways

(5, 5, 5, 6); so, no. of cases = $\frac{4!}{3!} = 4\ ways$

When sum is 22:

(6, 6, 6, 4); so, number of cases = $\frac{4!}{3!} = 4$ ways

(6, 6, 5, 5); so, number of cases = $\frac{4!}{2! \times 2!} = 6$ ways

When sum is 23:

(6, 6, 6, 5); so, number of cases = $\frac{4!}{3!} = 4$ ways

When sum is 24:

(6, 6, 6, 6); so, number of cases = $\frac{4!}{4!} = 1$ way

Thus, the total number of favourable cases = 4 + 12 + 4 + 4 + 6 + 4 + 1 = 35

So, the required probability = $\frac{35}{1296}$

Hence, option C is the correct answer.

54. A

Sol. Total capacity of the tank = LCM (15, 30, 45) = 90 units

Amount that Pipe P can fill in 1 hour = $\frac{90}{15} = 6$ units

Amount that Pipe Q can fill in 1 hour = $\frac{90}{30} = 3$ units

Amount that Pipe R can fill in 1 hour = $\frac{90}{45} = 2$ units

In the first 3 hours, all taps are opened; so, units filled = 3(6 + 3 + 2) = 33 units

In the next 3 hours, only taps P and Q are opened; so, units filled by them = 3(6 + 3) = 27 units

So, total units filled till now = 33 + 27 = 60 units

Remaining units to be filled = 90 – 60 = 30 units

So, pipe P will fill the total number of units = 30 + 6(6) = 66 units

So, the required fraction = $\frac{66}{90} = \frac{11}{15}$

Hence, option A is the correct answer.

55. C

Sol. We know that $x^3 - 1^3 = (x - 1)(x^2 + 1 + x)$

$\Rightarrow x^3 - 1^3 = 0$ [As $x^2 + x + 1 = 0$]

$\Rightarrow x^3 = 1$ and $x \neq 1$

So, $\frac{1}{3}(x^{31} + x^{32} + x^{33} + x^{34} + x^{35}) = \frac{1}{3}[x^{31}(1 + x + x^2) + x^{33}(x + x^2)]$

$= 0 + \frac{1}{3}(x^3)^{11}(-1) = 0 + \frac{1}{3}(-1) = -\frac{1}{3}$

Hence, option C is the correct answer.

56. A

Sol.

Actual amount that Ramesh was supposed to receive = $16000 \times (1.1)^3$ = Rs. 21296

Amount received by Ramesh = $16000 \times (1.1)^2 + 16000 \times (0.1) = 19360 + 1600 = 20960$

Difference between amounts = 21296 – 20960 = Rs. 336

i.e., Ramesh received approximately 1.5% less.

So, he received approximately 98.5% of the amount he was supposed to receive.

Hence, option A is the correct answer.

57. B

Sol. Number of sides of the regular polygon = n

So, the number of diagonals = $\frac{n(n-3)}{2}$

According to the question:

$n = \frac{1}{6} \times \frac{n(n-3)}{2}$

$\Rightarrow n - 3 = 12$

$\Rightarrow n = 15$

So, 2n = 30

Number of diagonals of the polygon having 2n sides = $\frac{30(30-3)}{2}$ = 405

Hence, option B is the correct answer.

58. D

Sol. Sum of all the six natural numbers = 96 × 6 = 576

Now, the smallest number can be 24.

So, the sum of the remaining numbers = 576 – 24 = 552

Since the smallest number is 24, all other numbers must be greater than it.

So, the four numbers can be 25, 26, 27, and 28.

In this case, the largest number = 446, which is not a multiple of 14

The largest number less than 446 which is a multiple of 14 is 434.

So, the least possible sum of four other numbers (other than largest and smallest) = 552 – 24 – 434 = 94

Thus, the least possible average of these four numbers = $\frac{94}{4}$ = 23.5

Similarly, the largest possible average will be when the larger five numbers are as close as possible.

i.e., $\frac{552}{5}$ = 110

So, consider the numbers 112, 111, 110, 109, and 108, but here, the sum is not 552.

So, we will take the largest number as 126 (because it should be a multiple of 14).

Thus, average of the remaining four numbers = $\frac{552 - 24 - 126}{4}$ = 100.5

So, the average of these four numbers will lie between 23.5 and 100.5.

Hence, option D is the correct answer.

59. B

Sol. Number of female employees in company D = (100 – 20)% of 15% of 8000 = 960

Number of male employees in company A = 40% of 20% of 8000 = 640

Required answer = $\frac{960}{640}$ × 100 = 150%

Hence, option B is the correct answer.

60. B

Sol. Let the quantities of the first, the second, and the third varieties of apples be ‘x’, ‘y’, and ‘z’, respectively.

So, CP of the mixture = 14x + 20y + 24z

And SP of the mixture = 18(x + y + z)

So, according to the question:

$18(x + y + z) = \frac{125}{100}(14x + 20y + 24z)$

$\Rightarrow 4(18x + 18y + 18z) = 5(14x + 20y + 24z)$

$\Rightarrow 72x + 72y + 72z = 70x + 100y + 120z$

$\Rightarrow 2x = 28y + 48z \Rightarrow x = 14y + 24z$

Among the options, only option B satisfies the above equation.

Hence, option B is the correct answer.