_____

MOCK CAT

SECTION – A

Directions for questions 1 – 5: Select the option that fills in the blanks most suitably (in the same order):

1.   Natural selection tends to eliminate genes that cause inherited diseases, acting most strongly against the most severe diseases; consequently, hereditary diseases that are----would be expected to be very----, but, surprisingly, they are not.

(1) lethal.. rare   (2) untreated.. dangerous

(3) unusual.. refractory   (4) new.. perplexing

2.   Although ancient tools were----preserved, enough have survived to allow us to demonstrate an occasionally interrupted but generally----progress through prehistory.

(1) partially.. noticeable   (2) superficially.. necessary

(3) unwittingly.. documented   (4) rarely.. continual

3.   For centuries animals have been used as----for people in experiments to assess the effects of therapeutic and other agents that might later be used in humans.

(1) benefactors   (2) companions   (3) examples   (4) surrogates

4.   The pressure of population on available resources is the key to understanding history; consequently, any historical writing that takes no cognizance of----facts is----flawed.

(1) demographic.. intrinsically   (2) ecological.. marginally

(3) cultural.. substantively   (4) psychological.. philosophically

5.   During the opera's most famous aria the tempo chosen by the orchestra's conductor seemed----,without necessary relation to what had gone before.

(1) tedious   (2) melodious   (3) capricious   (4) compelling

Directions for questions 6 – 12: Read the passage carefully and answer the questions based on them.

To the twin problems of food and population, we now add the depletion of nonrenewable resources, known in the jargon as the energy crisis. In addition to the obvious economic hardships this crisis can generate, we should focus also on the deeply personal disadvantages which will accrue. The key word here is inaccessibility, namely, the denial of the possibility of visiting the distant environs which surround us, and still more crucial, the denial of the possibility of visiting each other. We face a social impacting and a loss of national, let alone global, consciousness. We must implore our children to search for viable alternatives so that this crisis will be averted, else they will plunge backward into the provincial limitations of centuries past.

The irony of the above difficulties is that a resolution would be forthcoming if it were not for the emergence of still another world problem, that of ecological trashing. Symbolically, this is the most unsettling of all of our problems, for it results from the fallout of our most successful endeavors. John Dewey, in "Experience and Nature", long ago told us that we were in an irresolute struggle with the affairs of nature and that nature if abused, would strike back.

_____

Time is brief, and this statement must stand instead of the discourse which the subject deserves. Man finds himself living in an aleatory world; his existence involves, to put it baldly, a gamble. The world is a scene of risk: it is uncertain, unstable, uncannily unstable. Its dangers are irregular, inconstant, not to be counted upon as to their times and seasons. Although persistent, they are sporadic, episodic. It is darkest just before dawn; pride goes before a fall; the moment of greatest prosperity is the moment most charged with ill-omen, most opportune for the evil eye. Plague, famine, failure of crops disease, death, defeat in battle, are always just around the corner, and so are abundance, strength, victory, festival and song. Luck is proverbially both good and bad in its distributions. The sacred and the accursed are potentialities of the same situation; and there is no category of things which has not embodies the sacred and accurse: persons, words, places, times, directions in space, stone, winds, animals, stars.

Surely, the warning is clear; "the world is scene of risk". The solution of those problems most bothersome to one generation, often become irresolute difficulties of a subsequent generation. Time extracts its price. We and our children are inheriting polluted oceans, rivers, lakes, streams, and air. Some of us live on top of Love Canals, obviously inappropriately named as their noxious fumes and chemicals penetrate our deepest genetic structure. We, in our generation, have committed the cardinal sin. Instead of bequeathing a "leg up", a better world, or whatever cliché comes to mind, we have passed on a time bomb. Our children's ecological future is fraught with the residue of chemical seedings, poisonous in the long run. Our present generation is trapped in a classic case of Catch – 22. The energy crisis threatens our economic stability, our social patterns, and even penetrates to our long held image of ourselves as a necessarily mobile people. Yet, our potential resolutions of this problem are foreboding in their own right. If we reopen our massive coal reserves, we heighten our pollution level and expand the deadly presence of acid rain, which has already deadened hundreds of lakes and thousands of fish in upper New York State. The turn to nuclear power is even more frightening, as the events of Three Mile Island graphically attest. The genius of high technology is necessary to resolve the world's problems just detailed. Yet, it is that same high technology which has so threatened the delicate balance of the world's ecosystem, especially in its biochemical arrangements.

6.   What the author says about Love Canals suggests that; it is a

(1) misoneism   (2) miscarriage   (3) misrepresentation   (4) misnomer

7.   The significance of the author's stance that 'Ecological trashing' is symbolic of mankind's predicament, can be interpreted as:

(1)   Ecological trashing will assume such tremendous proportions in the future that the world will be choked to annihilation.

(2)   World's problems are sought to be resolved by the genius of high technology and that very technology is the bane of world's ecosystem.

(3)   The world is a scene of risk and the risk is compounded by the man-made mess which symbolizes his fall.

(4)   The moment of great prosperity is the moment most charged with ill-omen, and mankind, having experienced the first is perhaps in for the second.

_____

8. "Man finds himself living in an aleatory world." The expression has this connotation: It is a world that
   (1) depends upon contingencies   (2) is controlled by hostile forces
   (3) cannot come to grips with its own problems   (4) has a portentous future

9. According to the author, the mobility that may be desired by the energy crisis has some ramifications, beyond the material, like the threats to
   I.   economic stability   II.   social patterns
   III.   national coherence   IV.   global consciousness
   (1) All except I   (2) All except II   (3) All except III   (4) All except IV

10. From the trend of the passage, it can be expected that the passage was preceded by a discussion of
    (1)   nuclear conflagration.
    (2)   John Dewey's contribution to the study of nature.
    (3)   over-population and starvation.
    (4)   biochemical poisoning of the environment.

11. A suitable title for the passage is:
    (1) "The World is a Scene of Risk"   (2) Energy Crisis and Social Impacting
    (3) Do not Bequeath a Shamble   (4) Do We Want Another Three Mile Island?

Directions for questions 12 – 15: Each of the questions given below contains a small passage and four options following it. Select the option which answers the questions the best possible way.

12. Which of the following best completes the passage below?
    In a survey of job applicants, two-fifths admitted to being at least a little dishonest. However, the survey may underestimate the proportion of job applicants who are dishonest, because____.
    (1)   some dishonest people taking the survey might have claimed on the survey to be honest
    (2)   some generally honest people taking the survey might have claimed on the survey to be dishonest
    (3)   some people who claimed on the survey to be at least a little dishonest may be very dishonest
    (4)   some people who claimed on the survey to be dishonest may have been answering honestly

13. The average life expectancy for the United States population as a whole is 73.9 years, but children born in Hawaii will live an average of 77 years, and those born in Louisiana, 71.7 years. If a newlywed couple from Louisiana were to begin their family in Hawaii, therefore, their children would be expected to live longer than would be the case if the family remained in Louisiana.
    Which of the following, if true, would most seriously weaken the conclusion drawn in the passage?
    (1)   Insurance company statisticians do not believe that moving to Hawaii will significantly lengthen the average Louisianan's life.
    (2)   The governor of Louisiana has falsely alleged that statistics for his state are inaccurate.

_____

_____

(3) The longevity ascribed to Hawaii's current population is attributable mostly to genetically determined factors.

(4) Thirty percent of all Louisianans can expect to live longer than 77 years.

14. The average life expectancy for the United States population as a whole is 73.9 years, but children born in Hawaii will live an average of 77 years, and those born in Louisiana, 71.7 years. If a newlywed couple from Louisiana were to begin their family in Hawaii, therefore, their children would be expected to live longer than would be the case if the family remained in Louisiana.

Which of the following statements, if true, would most significantly strengthen the conclusion drawn in the passage?

(1) As population density increases in Hawaii, life expectancy figures for that state are likely to be revised downward.

(2) Environmental factors tending to favor longevity are abundant in Hawaii and less numerous in Louisiana.

(3) Twenty-five percent of all Louisianans who move to Hawaii live longer than 77 years.

(4) Over the last decade, average life expectancy has risen at a higher rate for Louisianans than for Hawaiians.

15. Insurance Company X is considering issuing a new policy to cover services required by elderly people who suffer from diseases that afflict the elderly. Premiums for the policy must be low enough to attract customers. Therefore, Company X is concerned that the income from the policies would not be sufficient to pay for the claims that would be made.

Which of the following strategies would be most likely to minimize Company X's losses on the policies?

(1) Attracting middle-aged customers unlikely to submit claims for benefits for many years.

(2) Insuring only those individuals who did not suffer any serious diseases as children

(3) Including a greater number of services in the policy than are included in other policies of lower cost

(4) Insuring only those individuals who were rejected by other companies for similar policies

Directions for questions 16 – 18: In the following questions, a sentence is broken in four parts and one of these four parts contains an error from the view point of requirements of Standard English grammar and spelling. Select the part having an error.

16. (1) Accused of murdering all those
     (2) opposed to her and of gratifying
     (3) her lust for power by all possible means
     (4) the example of her reign has been held as striking evidence of the evil of allowing women to meddle in politics

17. (1) By her extent of popularity with   (2) the Indian people she did
     (3) much for good relations   (4) between India and her own country.

_____

_____

18.   (1) He refrained from   (2) taking the money offered to him

       (3) though he felt himself much   (4) tempted to do so

Directions for questions 19 – 21: In each of the following questions, four statements are provided between an opening statement 1 and a closing statement 6. The four statements are jumbled up and form a coherent paragraph when properly arranged. Select the alternative representing the proper & logical sequencing of these six taken together.

19.   1.   A welfare state in the attainment of its objective must avoid coercion and violence.

       A.   But communism attains its ends through compulsion, coercion and even bloodshed.

       B.   Communism implies the loss of freedom of expression and action and introduces a regimentation of life.

       C.   These are all serious disadvantages that perhaps outweigh the economic gains.

       D.   Communism aims at the welfare state and perhaps the completest form of the welfare state in most respects.

       6.   A true welfare state can develop only by following the path of peace and democracy.

       (1) CADB   (2) ACDB   (3) DCAB   (4) DABC

20.   1.   The general enemy of mankind, as people have discovered, is not science, but war.

       A.   It is found that when there is peace, science is constructive: when there is war science is perverted to destructive ends.

       B.   Science merely reflects the social forces by which it is surrounded.

       C.   Until now, they have brought us to the doorstep of doom.

       D.   The weapons which science gives us do not necessarily create war; these make war increasingly more terrible.

       6.   Our main problem, therefore, is not to curb science, but to stop war, to substitute law for force and international governments for anarchy in the relations between nations.

       (1) ADBC   (2) BADC   (3) CDAB   (4) DABC

21.   A.   What I do wish to maintain – and it is here that the scientific attitude becomes imperative – is that insight, untested and unsupported, is an insufficient guarantee of truth, in spite of the fact that much of the most important truth is first suggested by its means.

       B.   I have no wish to deny it, nor even to declare that the insight which reveals it is not a genuine insight.

       C.   Of the reality or unreality of the mystic's world I know nothing.

       D.   It is common to speak of an opposition between instinct and reason.

       (1) ABCD   (2) ACBD   (3) CBAD   (4) CBDA

_____

Directions for questions 22 – 25: Read the passage carefully and answer the questions based on them.

Beyond the Many Mouths

Beyond the many mouths

Of the imagination,

Or dreams,

Which give us words,

Is numbness

Like a wind

Through icy branches,

Or the dead center

Of what we know.

In a stillness

That whispers,

A silence

That rustles

Like dead leaves,

Clacking like branches

In the night,

In the darkness burning,

We cannot look

Upon others

Without compassion,

Or upon ourselves

Without fear.

22. What is the theme of the poem?

    (1) Thoughts and feelings go hand in hand.

    (2) Thoughts and feelings are inseparable.

    (3) Thoughts and feelings generally go in different directions.

    (4) Thoughts and feelings have no meanings in life.

23. Who looks upon others in compassion and oneself in fear?

    (1) Heart   (2) Mind   (3) Body   (4) Can't say

24. Who does the poet refer to when he says 'dead center'?

    (1) Heart   (2) Mind   (3) Human being   (4) Spirit

25. What is the poet's attitude in the poem?

    (1) remorse   (2) philosophical   (3) self-questioning   (4) metaphorical

_____

SECTION – B

26. The product of the ages of three sisters is 36. The sum of their ages is a prime number. The youngest sister likes ice cream. The product of the ages of the two elder sisters is

    (1) 36   (2) 12   (3) 13   (4) 7

27. There is a single $21\sqrt{3}$ -foot vertical palm tree growing in the middle of a large flat desert island. On a certain day, the sun will rise at 6:00 am and set at 6:00 pm. At noon on that day, the sun will be directly overhead and the trunk of the palm tree will cast no shadow. A traveler lay down the night before this special day, and was awakened in the morning when the sun's rays reached his eyes, which were 21 feet due west from the tree. To the nearest minute at what time did he wake up?

    (1) 8 : 00 am   (2) 9 : 15   (3) 9 : 45   (4) None of these

28. What is the last digit in the finite decimal representation of the number $\dfrac{1}{5^{2003}}$?

    (1) 2   (2) 4   (3) 6   (4) 8

29. In how many different ways can I circle letters in the grid shown so that there is exactly one circled letter in each row and exactly one circled letter in each column?

A	B	C	D	E
F	G	H	I	J
K	L	M	N	O
P	Q	R	S	T
U	V	W	X	Y

    (1) 15   (2) 24

    (3) 60   (4) 120

30. The value of $\sqrt{n+1} - \sqrt{n}$ where n $\in$ I (set of positive integers)

    (1) increases as n increases

    (2) decreases as n increases

    (3) neither increases nor decreases with the value of n

    (4) may increase or decrease depending upon the value of n

31. The number of prime factors in the expression $7^{17} \times 11^{27}$ is

    (1) 44   (2) 459   (3) 2   (4) 10

_____

32. In the figure below, ABCDEF is a regular hexagon and $\angle AOF = 90^{o}$. FO is parallel to ED. What is the ratio of the area of the triangle AOF to that of the hexagon ABCDEF?
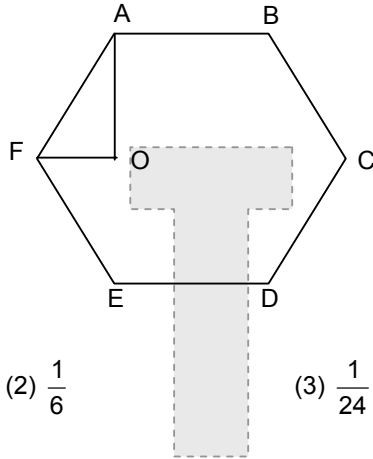
(1) $\dfrac{1}{12}$ (2) $\dfrac{1}{6}$ (3) $\dfrac{1}{24}$ (4) $\dfrac{1}{18}$

33. If the product of n positive real numbers is unity, then their sum is necessarily

(1) a multiple of n

(2) equal to $n + \dfrac{1}{n}$

(3) never less than n

(4) a positive integer

34. The number of positive integers n in the range $12 \leq n \leq 40$ such that the product (n - 1) (n - 2) ...3.2.1 not divisible by n is

(1) 5 (2) 7 (3) 13 (4) 14

Directions for questions 35 and 36: Answer the questions on the basis of the information given below.

A certain perfume is available at a duty-free shop at the Bangkok international airport. It is priced in the Thai currency Baht but other currencies are also acceptable. In particular, the shop accepts Euro and US Dollar at the following rates of exchange:
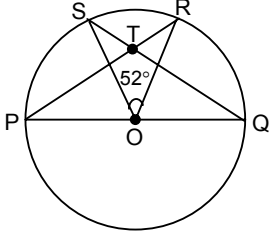
US Dollar 1 = 41 Bahts

Euro 1 = 46 Bahts

The perfume is priced at 520 Bahts per bottle. After one bottle is purchased, subsequent bottles are available at a discount of 30%. Three friends S, R and M together purchase three bottles of the perfume, agreeing to share the cost equally. R pays 2 Euros. M pays 4 Euros and 27 Thai Bahts and S pays the remaining amount in US Dollars.

35. How much does R owe to S in Thai Baht?

(1) 428 (2) 416 (3) 334 (4) 324

36. How much does M owe to S in US Dollars?

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

_____

37. A string of length 40 metres is divided into three parts of different lengths. The first part is three times the second part, and the last part is 23 metres smaller than the first part. Find the length of the largest part.

(1) 27 (2) 4 (3) 5 (4) 9

38. The number of zeroes in 23! is:

(1) 8 (2) 12 (3) 4 (4) 5

39. If you toss a fair coin n + 1 times and I toss it n times, what is the probability that you get more heads?

(1) 1/2 (2) $(1/2)^{n+1}$ (3) 1/4 (4) None of these

40. A thief was stealing diamonds from some jewellery store. On his way out, he encountered three guards, each was given half of the existing diamonds and two over it by the thief. In the end, he was left with one diamond. How many did the thief steal?

(1) 40 (2) 36 (3) 42 (4) 38

41. As shown in the fig. A circle with PQ as diameter, O as center and ∠SOR = 52°. PR & SQ intersect at T. Find ∠QTR

(1) 66° (2) 54°
(3) 74° (4) None

42. If $x \geq 0$, $y \geq 0$ and $(x + y) \leq 1$, then the maximum value of $(2x + 3y)$ is:

(1) 2 (2) 2.5 (3) 3 (4) 5

43. A hot-air balloon rises 80 feet in the first minute of flight. If in each succeeding minute the balloon rises only 90% as far as in the previous minute, what will be its maximum altitude if it is allowed to rise without limit?

(1) 88.8 feet (2) 800 feet (3) 888.8 feet (4) 900 feet

44. There are two numbers. 48 times the difference of the numbers is equal to the difference of their squares. The sum of the numbers is

(1) 48 (2) 96 (3) 32 (4) 36

45. The year is 2032. Ashwani, my grandson mentions to me that he is as old now as the last two digits of his birth year. What is his age?

(1) 32 (2) 16 (3) 24 (4) 18

_____

_____

46. What is the sum of the following series: $\dfrac{1}{1 \times 2} + \dfrac{1}{2 \times 3} + \dfrac{1}{3 \times 4} + ... + \dfrac{1}{100 \times 101}$?

   (1) $\dfrac{99}{100}$ (2) $\dfrac{1}{100}$ (3) $\dfrac{100}{101}$ (4) $\dfrac{101}{102}$

47. There are 4 numbers whose sum is 60. Their maximum product will be :
   (1) 50000   (2) 15000   (3) 60000   (4) 50625

48. C is the set of all sums of cubes of three consecutive natural numbers. Then every element of C is divisible by:
   (1) 2   (2) 3   (3) 4   (4) 5

49. Given $n = 1 + x$ and x is a product of four consecutive integers. Then which of the following is true?
   A. n is an odd integer   B. n is prime   C. n is a perfect square
   (1) both A and C are correct   (2) both A and B are correct
   (3) only A is correct   (4) only C is correct

50. Thirty students took an exam and got 2, 3, 4, 5 as their marks. The total marks of the 30 students were 93. The 3's were more than the 5's but less than the 4's. Also the number getting 4's was a multiple of 10 and the number of 5's was even. How many students scored three marks?
   (1) 6   (2) 7   (3) 8   (4) 9

_____

_____

SECTION – C

51. In "Ali Baba Chalis Chor", Ginie told Ali Baba that he could take jewels & diamonds only if he is able to find the correct statement from the following. Ginie also told that only one statement from the following is true.

1. Exactly one of these statements is false
2. Exactly two of these statements are false
3. Exactly three of these statements are false
4. Exactly four of these statements are false
5. Exactly five of these statements are false
6. Exactly six of these statements are false
7. Exactly seven of these statements are false
8. Exactly eight of these statements are false
9. Exactly nine of these statements are false
10. Exactly ten of these statements are false

So to get the jewels & diamonds what should be the answer of Ali Baba?

(1) Statement 3   (2) Statement 6   (3) statement 9   (4) Statement 10

Directions for questions 52 – 57: Refer to the data below :

In the following multiplication, each of the different letters denotes a different integer. Each letter stands for the same integer throughout.

```
        A   B   C   ×
            D   E
      ─────────────────
    A   C   F   B
    E   A   G
      ─────────────────
    F   H   F   B
```

52. The difference between A & B is :
    (1) 2   (2) 5   (3) 1   (4) 3

53. C is :
    (1) 2   (2) 3   (3) 6   (4) 8

54. D is :
    (1) 3   (2) 4   (3) 5   (4) 2

55. E is :
    (1) 7   (2) 3   (3) 4   (4) 8

_____

_____

56. F is :

    (1) 4   (2) 9   (3) 6   (4) 7

57. G + H is :

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

Directions for questions 58 – 62:

Mark the answer as

(1)   if the question can be answered with the help of one statement alone.

(2)   if the question can be answered with the help of each statement independently.

(3)   if the question can be answered with the help of both the statements together.

(4)   if the question cannot be answered even using both the statements.

58. Is a > b ?

    I   – 7 a + 7b is negative   II   7a + 7b is positive

59. Find the value of z.

    I.   The sum of two 3-digit number xyz & yxz is 990

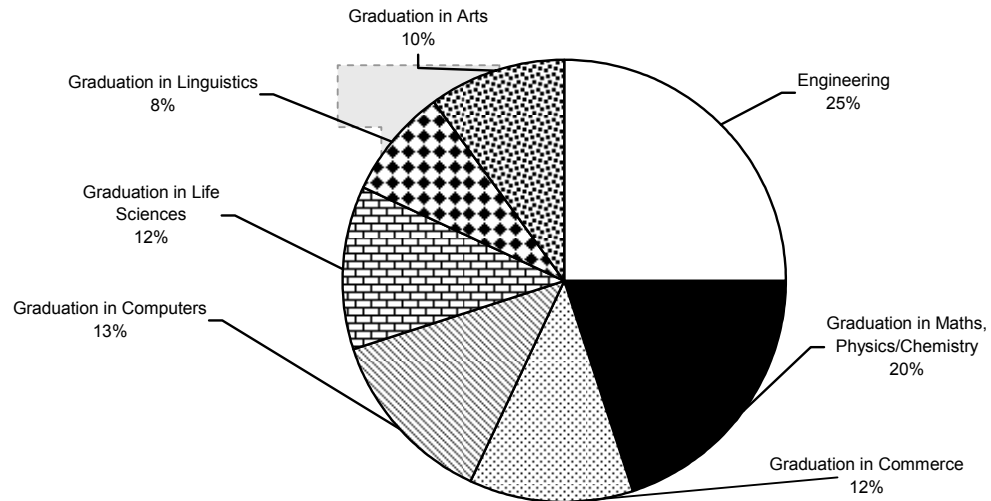   II.   z is the ten's digit of the number $(PQ5)^2$, where PQ5 is any three digit number.

60. Is o < p < 1 ? (p is a real number)

    I.   For q > 0, $pq + \dfrac{p}{q} = 1$ II. $p + \dfrac{1}{p} \le -2$

61. Find out n! ends with how many zeros.

    I. $n \ge 6$ II. n < 11

62. There are two products viz : P_1 & P_2. Find out which product gives more profit.

    I.   Both P_1 & P_2 have same selling price but profit percentage in the ratio 2 : 3

    II. P_1 gives a profit of 25% & P_2 gives a profit of 20%
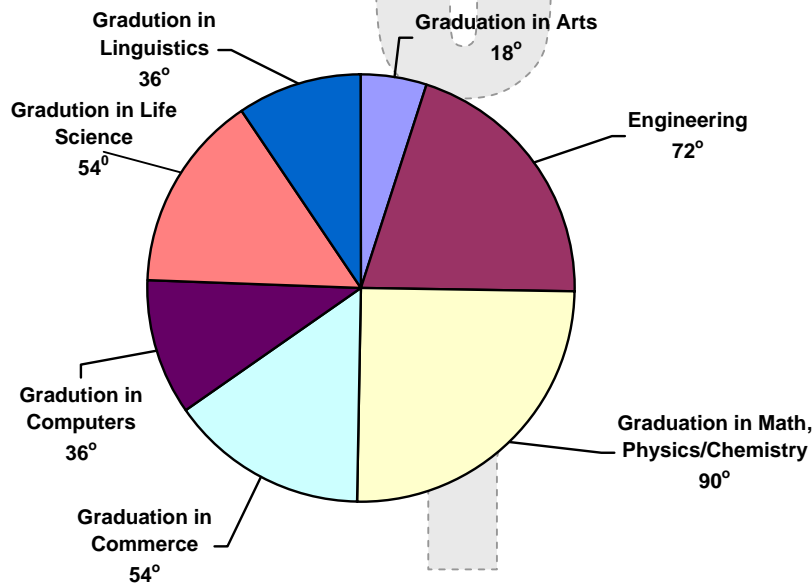
_____

_____

Directions for questions 63 – 67: Study the following pie charts & give the answers of following questions.

Year 2001

Graduation in Arts 10%

Graduation in Linguistics 8%

Graduation in Life Sciences 12%

Graduation in Computers 13%

Engineering 25%

Graduation in Maths, Physics/Chemistry 20%

Graduation in Commerce 12%

Total no. of students 38620.

Year 2002

Gradution in Linguistics 36°

Gradution in Life Science 54°

Graduation in Arts 18°

Engineering 72°

Gradution in Computers 36°

Graduation in Commerce 54°

Graduation in Math, Physics/Chemistry 90°

Total no. of students 46520

63.   What is the difference of students in engineering stream in 2001 and 2002?

(1) 261   (2) 190   (3) 351   (4) 420

_____

64. What was the percent increase or decrease of students into Life Sciences in 1999 and 2000?

(1) 27% decrease   (2) 42% increase   (3) 64% increase   (4) Can't be determined

65. What is the ratio of number of students Graduates in Linguistics in 2001 to the number of students in Graduates in Commerce in 2002?

(1) 0.66   (2) 0.56   (3) 0.43   (4) 0.73

66. What is the percent increase in seats in the college from 2001?

(1) 17   (2) 20   (3) 23   (4) 25

67. How many streams in 2002 had more students than 4651?

(1) Three   (2) six   (3) Four   (4) Five

Directions for questions 68 – 72: Study the following information carefully and answer the questions given below :

(i) A, B, C, D, E, F & G are seven persons wearing a different colored shirt-white, red, black, green yellow, blue and violet and a different colored trouser – blue, red, white, black, cream, yellow & indigo. The person's color of the shirt and the color of the trouser above are not necessarily in the same order. No person is wearing shirt and trouser of same color.

(ii) B is wearing red color shirt and is not wearing cream or yellow color trousers. D is wearing green color shirt and indigo color trousers. Color of A's shirt and F's trousers is same. Color of E's shirt and C's trousers is same. G is wearing blue shirt and E is wearing blue trousers. F is not wearing any yellow dress. Red and blue is not the combination of shirt and trousers of any of the persons.

68. What is the color of A's trousers?

(1) White   (2) Cream   (3) Red   (4) Yellow

69. What is the color of G's trousers?

(1) Red   (2) Cream   (3) White   (4) Indigo

70. Who wears Violet colored shirt?

(1) C   (2) F   (3) C or F   (4) Data inadequate

71. What is the color of F's shirt?

(1) Blue   (2) Violet   (3) Green   (4) Data inadequate

72. What is the color of B's trousers?

(1) Red   (2) White   (3) Indigo   (4) None of these

_____

Questions 73 and 74 are based on the following

John lives with his wife, sons, daughters-in-law and the sons' children. (All his sons, daughters-in-law and sons' children stay with John. No one else stays with him.) He has six sons. Each of the sons has an equal number of children. Strict monogamy is practiced in the family.

73.   The total number of persons staying with John is equal to which of the following (given that is one of the following)?

(1) 25   (2) 32   (3) 26   (4) 33

74.   We can now (that is, after answering the above question) say that the total number of grand children in the family exceeds the number of fathers in the family by

(1) 6   (2) 18   (3) 19   (4) 5

75.   There are six boxes containing 5, 7, 14, 16, 18, 29 balls of either red or blue in colour. Some boxes contain only red balls and others contain only blue. One sales man sold one box out of them and then he says "I have the same number of red balls left out as that of blue". Which box is the one he sold out?

(1) 7   (2) 5   (3) 29   (4) None of these

_____

MOCK CAT

ANSWERS

1. (1)	2. (4)	3. (4)	4. (1)	5. (3)	6. (4)	7. (2)	8. (1)
9. (1)	10. (3)	11. (3)	12. (1)	13. (3)	14. (2)	15. (1)	16. (4)
17. (1)	18. (3)	19. (4)	20. (2)	21. (3)	22. (3)	23. (1)	24. (1)
25. (2)	26. (1)	27. (4)	28. (4)	29. (4)	30. (2)	31. (1)	32. (1)
33. (3)	34. (2)	35. (4)	36. (3)	37. (1)	38. (3)	39. (1)	40. (2)
41. (4)	42. (3)	43. (2)	44. (1)	45. (2)	46. (3)	47. (4)	48. (2)
49. (1)	50. (2)	51. (3)	52. (2)	53. (1)	54. (3)	55. (4)	56. (2)
57. (1)	58. (1)	59. (2)	60. (2)	61. (4)	62. (1)	63. (3)	64. (4)
65. (1)	66. (2)	67. (2)	68. (3)	69. (2)	70. (3)	71. (4)	72. (4)
73. (1)	74. (4)	75. (3)					

EXPLANATIONS

1. The first part of the sentence is a statement: the more severe an inherited disease is, the more likely it is that the genes causing it will be eliminated by natural selection. The word "consequently" suggests that the missing words must, together, make a statement in keeping with this assumption. (1) is the correct answer. A disease that is "lethal" is very severe. Because, according to the statement, the most severe diseases are likely to be most strongly acted against and are therefore least likely to recur, one would expect "lethal" diseases to be very "rare". (2) is incorrect. It is possible that diseases that are "untreated" would be "dangerous," but the first part of the sentence suggests that the expectation concerns the elimination of hereditary diseases, not their dangerousness. (3) is also incorrect. There is no information in the sentence that suggests that the more "unusual" a disease is, the more "unusual" a disease is, the more "refractory" (resistant to treatment) it will be. (4) is not the correct answer. It is not unlikely that "new" hereditary diseases would be "perplexing," but the first part of the sentence suggests that the expectation concerns the elimination of hereditary diseases, not whether they are perplexing. **Answer: (1)**

2. The first missing word describes how ancient tools were preserved. The phrase "enough have survived" indicates that not all survived, and the word "Although" indicates that the tools were preserved in a way that would not lead you to expect enough to survive. The second missing word describes a progress through prehistory. The word "but" suggests that the word that fills the second blank must contrast with the idea of occasional interruption. (4) is the correct answer. It is logical to say that enough tools have survived in spite of their being "rarely" preserved. A "continual" progress contrasts with one that is occasionally interrupted. **Answer: (4)**

3. The missing word describes a role animals play in experiments. The sentence indicates that experiments using animals occur before the agents studied in the experiments are used in people. The correct answer is (4). A "surrogate" serves as a substitute. **Answer: (4)**

4. The first part of the sentence emphasizes that, in order to understand history, it is important to take into account the great importance of the pressure of population on available resources. The word "consequently" indicates that the second part of the sentence describes a conclusion that follows from the statement made in the first part. In this case, what follows is a judgment about any historical writing that does not show recognition of the correctness of the statement. The first missing word will provide a one-word description of the type of fact suggested by the first part of the sentence. The second missing word describes in what way writing that fails to take this type of fact into account is flawed. (1) is the correct answer. "Demographic" facts are derived from the study of human populations. The "pressure of population" mentioned in the first clause is a "demographic" consideration. Because the sentence

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indicates that these facts are very important, you can conclude that the author believes that writing that fails to take them into account is "intrinsically" (essentially) flaw. **Answer: (1)**

5.   The placement of the words "without necessary relation to what had gone before" in the sentence suggests that these words provide an explanation or elaboration of the missing word. (3) is the correct answer. A "capricious" choice is made without a rational basis. "What had gone before" is a possible rational basis for choosing a particular tempo. **Answer: (3)**

12.   **(1) is the best answer.**

        If applicants who are in fact dishonest claimed to be honest, the survey results would show a smaller proportion of dishonest applicants than actually exists. Therefore, this choice is the best answer. (2) is inappropriate because generally honest applicants who claimed to be dishonest could contribute to the overestimation, but not to the underestimation, of dishonest applicants. (4) is inappropriate because applicants who admitted their dishonesty would not contribute to an underestimation of the proportion of dishonest applicants. (3) is inappropriate because the argument is concerned neither with degrees of dishonesty nor with the honesty of non-applicants.

13.   (3) is the best answer.

        This choice suggests that a significant proportion of Hawaii's population is genetically predisposed to be long lived. Since Louisianans are not necessarily so predisposed, and since the Louisianans' children will acquire their genetic characteristics from their parents, not from their birthplace, this choice presents a reason to doubt that Hawaiian born children of native Louisianans will have an increased life expectancy. Therefore, this choice is the best answer. Because the conclusion concerns people born in Hawaii, not the average Louisianan, (1) does not weaken the conclusion. Because the governor's allegation is false, it cannot affect the conclusion. (4) fails to weaken the conclusion because it is consistent with the information given and the conclusion about life expectancy.

14.   If (2) is true, the greater abundance of longevity-promoting environmental factors it mentions is probably at least partly responsible for the higher life expectancy in Hawaii. Children born in Hawaii benefit from these factors from birth, and thus Louisianans who have children in Hawaii increase their children's chances of living longer. Therefore, (2) is the best answer. If life expectancy in Hawaii is likely to be falling, as (1) says, the argument is weakened rather than strengthened. (3), in the absence of other relevant information, has no bearing on the conclusion; thus, they are inappropriate. (4) is irrelevant, because the information it mentions about rates would already have been incorporated into the statistics cited in the passage.

15.   Insurance companies can improve the ratio of revenues to claims paid, thus minimizing losses, if they insure as many people belonging to low-risk groups as they can. Because the strategy described in (1) adds a low-risk group to the pool of policyholders, this choice is the best answer. (2) is irrelevant, since no link is established between childhood diseases and diseases affecting the elderly. (3) is inappropriate, since increasing the number of services covered is unlikely to minimize losses. (4) is inappropriate, since it would increase the likelihood that claims against the policy will be made.

16.   …… as the example of …

17.   By the extent of her popularity with ….

18.   …though he felt much….

19.   'A' seems to be a good choice as the statement after 1. But see carefully. Statement 1 is talking about welfare state and A about communism. 'D' is the statement, which is a link between both of them. The idea of the statement (A) is completed in (B). After that (C) statement gives the most logical conclusion. So the answer is (4).

20.   'DC' is the best sequence here. The only answer which gives us this is (2).

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Solutions 22 – 25:

About the Poem : -

The poem talks about many thoughts, imaginations & dreams, which people have. But it says that in spite all of them we have a dead center- the heart which is rotting away in the various imaginations and thoughts of the brain. The emotions have taken a back seat and now are almost dead. We have no love or compassion left in us but only fear – fear of competition, fear of others & even fear of ourselves.

22. The answer (3) is evident because the poet sees no harmony between the thoughts and the emotions. They have now taken different paths. **Answer: (3)**

23. (1) From the poem, we can find that it is the dead center which looks upon others in compassion & oneself in fear. The dead center is the heart in the poem. **Answer: (1)**

24. As mentioned above, the answer is (1).   **Answer: (1)**

25. The poet is not repenting about anything. So, answer can't be (1). The poet isn't questioning any idea. This eliminates answer (3). The poet is not becoming philosophical eliminating option (2). So, answer is (4) as poet is talking about the emotions and the mind figuratively.   **Answer: (2)**

26. Let the age of first, 2nd & 3rd sister is x, y & z respectively.

    According to question

    xyz = 36

    = $1 \times 6 \times 6$

    Sum = 1 + 6 + 6 = 13   (This is prime)

    Hence Product of two elder sisters = 36   **Answer: (1)**

27. Let A be the angle between sun ray and palm tree.

    At 6 am when sun rise up from horizon, A = 180 degree; at 12 am when the sun is shining right above the tree, A = 0 degree.

    When the sun travels from 6 am to 12 am (6 hrs), it traces the curve = quarter of the circle = 90 degree so the rate of the sun tracing the curve = 90/6 = 15 degree/hr = 0.25degree/min

    let h = 21$\sqrt{3}$ feet (height of the tree) &   r = 21feet

    so tan θ = (21/21$\sqrt{3}$) = 1/$\sqrt{3}$.   It means θ = 30 degree

    but the angle that the sun has traveled is 90-30=60 degree

    T(time) = 60/0.25 = 240 min. = 4 hrs

    So at 10:00 am this person was waken up by the sun.   **Answer: (4)**

28. $\dfrac{1}{5^{2003}} = \left(\dfrac{1}{5}\right)^{2003}$ = $(0.2)^{2003}$

    Now divide 2003 with 4, you will get 3 as remainder, So 2^3 = 8.

    $\therefore (0.2)^{2003}$ ends with 8.   **Answer: (4)**

29. There are only five ways to select first circled letter so that exactly there is one circled letter in each row as well as in each column.

    Then there are 4 ways for 2nd, 3 for 3rd, 2 for 4th & one for 5th

    $\therefore$ Total ways = $5 \times 4 \times 3 \times 2 \times 1 = 5!$ = 120 ways
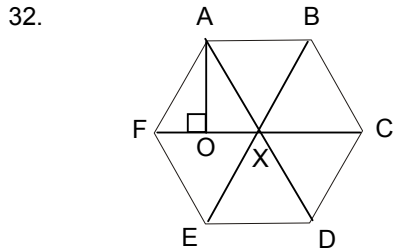
    Hence,   **Answer: (4)**

30. $\sqrt{n+1} - \sqrt{n}$

    = $\dfrac{(\sqrt{n+1} - \sqrt{n})(\sqrt{n+1} + \sqrt{n})}{(\sqrt{n+1} + \sqrt{n})}$

    = $\dfrac{n+1-n}{\sqrt{n+1} + \sqrt{n}}$ = $\dfrac{1}{\sqrt{n+1} + \sqrt{n}}$

_____

_____

As n increases, the value of $\dfrac{1}{\sqrt{n+1}+\sqrt{n}}$ decreases.　　**Answer : (2)**

31.　$7^{17} \times 11^{27} = 7 \times 7 \ldots\ldots \times 11 \times 11 \ldots\ldots$

The number of prime factors in 17 + 27 = 44. **Answer: (1)**

32.

After joining all the opposite vertices (let them meet in point X), we find that right triangle AOF $\equiv$ right triangle AOX.

$\Rightarrow$ A ($\triangle$AOX) = A ($\triangle$AOF) = ½ A ($\triangle$AFX)

$\dfrac{\text{A[triangle AOF]}}{\text{A[hexagon ABCDEF]}} = \dfrac{\text{A[triangle AOF]}}{6[\text{A (triangle AFX)}]} = \dfrac{\text{A[triangle AOF]}}{6[2\text{A (triangle AOF)}]} = \dfrac{1}{12}$. **Answer: (1)**

33.　Take n = 2, 3, 4 (no. of real positive numbers) but remember their product should be 1.

Let n = 4 and the numbers be $\dfrac{1}{2}$, 2, $\dfrac{1}{3}$ and 3

Sum = 2 + 3 + $\dfrac{1}{2}$ + $\dfrac{1}{3}$ = $\left(5 + \dfrac{5}{6}\right) > 4$

Now take 3 numbers so that n = 3.

$\therefore$ Sum = 1 + 1 + 1 = 3

Thus the sum is never less than 3.　　**Answer: (3)**

34.　The positive integers (n) in the range $12 \le n \le 40$ such that the product (n – 1) (n – 2) …

3.2.1 is not divisible by n is the number of prime numbers in the given range

Those integers are 13, 17, 19, 23, 31 and 37.

i.e., 7. **Answer: (2)**

For questions 35 & 36

520 Bahts per bottle.

Hence, cost for 3 bottles = 520 + 2 $\times$ $\dfrac{70}{100}$ $\times$ 520 = 1248 Bahts.

They each has to pay 416 Bahts.

But

R pays 2 Euros = 2 $\times$ 46 = 92 Bahts

M pays 4 Euros and 27 Bahts = 4 $\times$ 46 + 27 = 184 + 27 = 211 Bahts

S pays 1248 – (92 + 211) = 945 Bahts

35.　R owes S 416 – 92 = 324 bahts.

Answer: (4)

36.　M owes S (416 – 211) = $\dfrac{205}{41}$ bahts = 5 US Dollars. **Answer: (3)**

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37. Let the 3 parts of the string be x, y, z, now x + y + z = 40, x = 3y and x – z = 23 solving, we get z = 4.

TCY's Logical approach

Check from options, largest part is 27 m and in the question it is given to us that the last part is 23 metres smaller than the first part. It means one of the parts has to be more than 23 metres and this will be the largest one. **Answer: (1)**

38. Let us express 23! As a product of prime numbers.

Let $23! = 2^a \times 3^b \times 5^c \times 7^d \times 11^e \times 13^f \times 17^g \times 19^h$ – (1)

The number of zeros in 23! is equal to n if 10^n is divisor of 23!. The factors of 10 are 2 and 5.

Therefore n is the least of the powers of 2^a and 5^c that is least of a and c.

Here $a = I\left(\dfrac{23}{2}\right) + I\left(\dfrac{11}{2}\right) + I\left(\dfrac{5}{2}\right) + I\left(\dfrac{2}{2}\right) = 11 + 5 + 2 + 1 = 19$ and $c = I\left(\dfrac{23}{5}\right) = 4$.

Note : The method of finding the value of a is as below :

By I (23/2) we mean the integral part (i.e.) whole number part of (23/2)

Therefore I (23/2) = 11. We consider I (11/2) as the second term in finding the value of a

The value of I (11/2) is 5 since (11/2) = 5.5. Then consider the value of I (5/2) = 2

Further I (2/2) = 1. Since 1 is smaller than 2, I (2/2) is the last term

$\Rightarrow a = I.\left(\dfrac{23}{2}\right) + I\left(\dfrac{11}{2}\right) + I\left(\dfrac{5}{2}\right) + I\left(\dfrac{2}{2}\right)$

= 11 + 5 + 3 + 1 = 19

Alt. Sol. : $23! = 1 \times 2 \times 3 \times 4 \times 5 \times 6............\times 20 \times 21 \times 22 \times 23$

$\Rightarrow (2 \times 5)$ will give one zero

10 will give one zero

(12×15) will give one zero   Total = 4 zeroes.   **Answer: (3)**

20 will give one zero

39. Suppose the prob of us getting equal numbers of heads in n tosses each is p. Then by symmetry the prob you get more is (1 – p)/2. Now your last toss cannot worsen your position. If you were ahead at n, you will still be ahead whatever the outcome. If we were level at n, then you have 1/2 chance of moving ahead.

So your chance of winning is 1/2 – p/2 + p/2 = 1/2.   **Answer: (1)**

40. **TCY's logical approach**

40 can't be the answer because after the first step, he will be left with 18 diamonds and after second step he will be left with 7 diamonds. Now these diamonds can't be divided into 2 parts (it has to be integer). With the same logic you can eliminate options (3) and (4). **Answer: (2)**
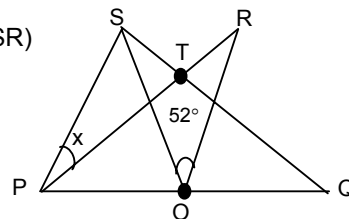
41. $x = \dfrac{1}{2}(52°) = 26°$ ($\because$ angle at centre = 2 × $\angle$at P on same SR)

& $\angle$PSQ = 90 ($\angle$ in semicircle)

Now in $\triangle$ STP

$\angle$ PTS = 180 – 90 – 26 = 64°

$\therefore \angle$ QTR = $\angle$PTS = 64°   **Answer: (4)**

42. If x = 0 & y = 1 then 2x + 3y = 3 and has maximum value.   **Answer: (3)**

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43. The total height in feet that the balloon rises is

80 + 80(0.9) + 80(0.9)^2 + ….

This is an infinite geometric series whose sum is

$\dfrac{80}{1-(0.9)}$ = 800 feet. **Answer : (2)**

44. Let the two numbers be m and n.

By the given condition 48(m - n) = m^2 - n^2 therefore (m + n) = 48.   **Answer: (1)**

45. Let x be the Ashwani's Present age then the last two digits of birth year = 32 – x

According to the given situation

x = 32 – x $\Rightarrow$ 2x = 32

Thus x = 16

So, Ashwani's present age is 16 years and his birth year is 2016.   **Answer: (2)**

46. We can write the sum as

$(1-\dfrac{1}{2}) + (\dfrac{1}{2}-\dfrac{1}{3}) + (\dfrac{1}{3}-\dfrac{1}{4}) + ... + (\dfrac{1}{100}-\dfrac{1}{101}) = 1 - \dfrac{1}{101}$ (Rest of the terms will cancel out)

= $\dfrac{100}{101}$ **OR** when n (no. of terms) is 1 then ans. is ½, when n = 2, then ans. is ½ +1/6 = 2/3

Similarly when n = 100, ans. is 100/101 i.e n/n+1   **Answer: (3)**

47. Product will be maximum when they are equal. Hence each number = 15

Product = 15^4 = 50625.   **Answer: (4)**

48. Let the three consecutive natural numbers are (n – 1), n & (n + 1)

Now sum of their cubes

   = (n – 1)^3 + n^3 + (n + 1)^3

   = n^3 - 3n(n – 1) – 1 + n^3 + n^3 + 3n (n + 1) + 1

   = 3n^3

Hence, sum of cubes of any three consecutive natural numbers is a multiple of 3. So it is always divisible by 3.   **Answer: (2)**

49. Take any 4 values, like 2, 3, 4, 5 and get the answer A& C only. **Answer: (1)**

50. Number of students getting 4 can only be 10.

Number of getting four > number getting three > number getting five.

Total students = 30. Total marks = 93

Subtracting 10 students having 4 marks.

Remaining students = 20, marks left = 93 – 40 = 53.

Now there is to make a unique combination of marks and students that satisfy above values. Such a combination is given as under.

Marks	Students	total marks
2	11	22
3	7	21
5	2	10
	20	53

$\therefore$ There are 7 students having 3 marks. **Answer: (2)**

_____

_____

51.   Statement 9 is correct. Since in the given statements one & only one is true, it means nine are false & one is correct. So according to 9th statement this is clear. **Answer: (3)**

Solutions 52 – 57:

```
          A     B     C   ×
                      D     E
        _____
        A     C     F     B
        E     A     G
        _____
        F     H     F     B
```

F + G = F   ⇒ G should be 0. hence D x C should end with 0
That means D can be 2, 4, 6, 8 and C can be 5.   Or Vice-Verse
Now try options
C can't be 5 (from option)
So D has to be 5.
∴ D = 5
∴ A should be 1   (∵ FHFB is a four digit no.)
A = 1

```
          1     B     C
                5     E
        _____
        1     C     F     B
        E     1     0
        _____
        F     H     F     B
```

C can't be 6, 8 (check options) because in that case carry over will be 3 and 4 respectively and thus
5 × B + carry over can't be 1 is these cases.
So C = 2
Now if E = 7, than B = 4
In this case 1BC × E is not coming to be four digit number (1CFB)
In this same manner E can't be 3 and 4
So E = 8   ⇒ B should be 6
So finally our multiplication is

```
          1     6     2
                5     8
        _____
        1     2     9     6
        8     1     0
        _____
        9     3     9     6
```

Thus   A = 1, B = 6, C = 2
D = 5, E = 8, F = 9
G = 0, H = 3

52.   (2)   53.   (1)
54.   (3)   55.   (4)
56   (2)
57   (1)

_____

58. From statement - I : – 7 a + 7 b = – 7 (a – b) is negative $\Rightarrow$ a > b

From statement – II : we cannot determined

Answer: (1)

59. From statement I, we can conclude that z = 0

From statement II, $\because$ the given number(PQ5) ends with 5 & the last two digit of a square of every no. which ends with 5 are 25. Hence here z = 2   **Answer: (2)**

60. From I, $p(q + \frac{1}{q}) = p(q^2 + 1) = q$ $\Rightarrow 0 \langle p < 1$

From II, $p + \frac{1}{p} \leq -2$ $\Rightarrow p^2 + 2p + 1 \leq 0$

$\Rightarrow (p + 1)^2 \leq 0 \Rightarrow p = -1$

Hence both statement are sufficient.   **Answer: (2)**

61. From I : Here n $\geq$ 6, we know 5! ends with one zero. $\therefore$ we do not know the exact value of n, so we can't find the no. of zero at the ends of n (If n < 10 then it ends with one zero but if n > 11 then it ends with more than one zero).

From II   Here n < 11

If n = 10 then there are two zero at the end but If n < 10 then there is one zero at the end so from this statement also we are not able to give the Answer.

If we combine both statements then also we are not able to given ans.   **Answer: (4)**

62. From I :We know that the price of P_1 & P_2 & also their profit percentage ratio of both. So we can find which product is more profitable.

From II, We do not know about the price so we can't find which is more profitable.   **Answer: (1)**

63. 25% of 38620 in 2001 = 9655

72° = 20% 46520 in 2002 = 9304

Difference= 9655 – 9304 = 351   **Answer: (3)**

64. Graduates in Life Sciences in 2001 = 0.12 * 38620 = 4634.4 ≈ 4634

We know 54° = 15 %

$\therefore$ Graduates in Life Sciences in 2002= 0.15 * 46520 = 6978

% increase = (6978 – 4634)/4634 = 50.58% ≈ 50 **Answer: (4)**

65. 36° = 10 %

$\frac{\text{Graduates in Linguistics in 2001}}{\text{Graduates in Commerce in 2002}} = \frac{8 * 38620}{10 * 46520} \cong 0.66$ **Answer: (1)**

66. % increase in seats = (46520 – 38620)/38620 = 20 %   **Answer: (2)**

67. In 2002, all streams had more students than 4651 except Arts.   **Answer: (2)**

68 – 72 : On the basis of the given information and conclusions as well as sub-conclusions drawn from them we can construct the following table:-

Person	Color of shirt	Color of trousers
A	White/Black	Red
B	Red	Black/White
C	Black/White/Violet	Yellow
D	Green	Indigo
E	Yellow	Blue
F	Black/White/Violet	White/Black
G	Blue	Cream

_____

68.   The color of A's trousers is red.

69.   The color of G's trousers is cream.

70.   Either C or F wears violet color shirt.

71.   The color of F's shirt can be black, white or violet.

72.   The color of B's trousers is either Black or White.

73.   Let the number of children each son has be x.

Then, the people staying with John are his wife, 6 sons, 6 daughters-in-law and 6x children.

The number of people staying with

John   = 1 + 6x + 12

= 6 (x + 2) + 1.

As x is an integer, x + 2 is an integer.

The total number of people staying with John must be 1 + a multiple of 6. Hence we can see that the answer is (1). (Note : The question pertains to the total number of people staying with John, and not the total number of people in that family. The latter number is 26, but the required answer is 25.]

Answer: (1)

74.   6 (x + 2) + 1 = 25

Therefore, 6(x + 2) = 24. Hence x + 2 = 4, and x = 2. So the total number of grand children in the family = 6 x 2 = 12. The number of fathers in the family = 7 (John and his 6 sons. Note that John himself is a father).

The answer is 12 – 7 = 5. **Hence (4)**

75.   Total number of balls = 89 and (89-29 /2) = 60/2 = 30 and also 14 + 16 = 5 + 7 + 18 = 30

Answer: (3)

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