

HCL Mock – 1

English

Topic -antonyms

1) Select the most appropriate antonym of the given word.

GRANDIOSE

- a) Humble
- b) Informative
- c) Indignant
- d) Elusive

Correct Choice: a

Explanation:

GRANDIOSE means magnificent. HUMBLE is its antonym. Thus, (a) is the right answer.

Informative - giving knowledge. Indignant - angry. Elusive - avoidant.

Topic –spelling test

2) Select the correctly spelled word.

- a) Lethargic
- b) Lethargic
- c) Lethargic
- d) Lethargic

Correct Choice: c

Explanation:

The correctly spelled word is LETHARGIC and it means lacking in energy. Thus, (c) is the right answer.

Topic –single filler

(3-4) Select the most appropriate option to fill in the blank.

3) _____ improvements in the associated technology have enabled nothing less than a quantum leap forward.

- a) Enjoyable
- b) Enormous
- c) Numerously
- d) Espoused

Correct Choice: b

Explanation:

We need an adjective to modify the noun IMPROVEMENTS. The sentence tells us about huge improvements in technology. ENORMOUS will fit here, making (b) the right answer.

Enjoyable - causing pleasure. NUMEROUSLY is an adverb. Espoused (verb) - promoted.

Topic –single filler

(3-4) Select the most appropriate option to fill in the blank.

4) If you can't budget effectively, you _____ your financial security by spending more than you earn.

- a) Danger
- b) Dangerous
- c) Dangering
- d) Endanger

Correct Choice: d

Explanation:

We need a verb here to link the subject YOU with the object SECURITY. ENDANGER means to risk and will fit here, making (d) the right answer.

DANGER is a noun and DANGEROUS is an adjective. DANGERING is grammatically wrong.

Topic-error location

5) In the sentence identify the segment which contains a grammatical error.

During the past 50 years, our society have been immeasurably enriched by people from different cultures, creeds and religions.

- a) During the past 50 years, our society
- b) have been immeasurably
- c) by people from different
- d) cultures, creeds and religions.

Correct Choice: b

Explanation:

In B, replace the plural verb HAVE with the singular HAS as the subject SOCIETY is singular. Thus, (b) is the right answer.

Topic -antonyms

6) Select the most appropriate antonym of the given word.

FACILITATE

- a) expedite
- b) permit
- c) hinder
- d) hasten

Correct Choice: c

Explanation:

FACILITATE means to enable something. HINDER means to restrict and is an antonym. Thus, (c) is the right answer.

Expedite - enable. Permit - allow. Hasten - accelerate.

Topic –active voice/passive voice

7) Select the correct active form of the given sentence.

The mask was worn by the culprit.

- a) The culprit wears the mask.
- b) The culprit wore the mask.
- c) The culprit had worn the mask
- d) A mask is being worn by the culprit.

Correct Choice: b

Explanation:

The sentence is in the indicative mood and passive voice. Follow the rules below to convert a sentence in the indicative mood to active voice:

1. The subject clause will become the object clause. Here, the subject THE MASK will change to the object, and the object THE CULPRIT will change into the subject and begin the sentence.
2. Replace WAS WORN with WORE.
3. Remove the conjunction BY before THE CULPRIT.

Option (b) is the right answer.

Topic -synonyms

8) Select the most appropriate synonym of the given word.

TACITURN

- a) Reticent
- b) Innocent
- c) Ignorant
- d) Complacent

Correct Choice: a

Explanation:

TACITURN means untalkative. RETICENT means reserved or silent, and is closest in meaning. Thus, (a) is the right answer.

Innocent - not guilty of an act. Ignorant - foolish; unaware. Complacent - self satisfied.

Topic –Para-jumbled sentences

9) Given below are four jumbled sentences. Select the option that gives their correct order.

P. Lambs are usually dropped in the spring and are sold at ages of from three to eight months.

Q. In many parts of the world, small flocks are kept partly as scavengers to clean up fence rows, weeds, brush, and other undesirable forage.

R. But this is a diminishing role.

S. Large flocks are maintained partly for wool and partly for market lambs.

- a) QSRP
- b) QRSP
- c) PQSR
- d) PQRS

Correct Choice: b

Explanation:

QRSP is the final order. Q begins the passage by introducing the main topic - many small flocks of sheep are kept as scavengers. R tells us that this role is declining. S follows by telling us what large flocks are kept for. P follows by telling us more about market lambs mentioned in S. Thus, (b) is the right answer.

Topic –active voice/passive voice

10) Select the correct passive form of the given sentence.

My parents had never asked such a question before.

- a) Such a question is never asked before by my parents.
- b) Never before had my parents asked such a question.
- c) Such a question had never been asked before by my parents.
- d) My parents will never ask such a question again.

Correct Choice: c

Explanation:

The sentence is in the indicative mood and active voice. Follow the rules below to convert a sentence in the indicative mood to passive voice:

1. The subject clause will become the object clause. Here, the subject MY PARENTS will change to the object, and the object SUCH A QUESTION will change into the subject and begin the sentence.
2. Replace HAD NEVER ASKED with HAD NEVER BEEN ASKED.
3. Put the conjunction BY before the subject MY PARENTS.

Option (c) is the right answer.

Topic –phrasal verbs/idioms

11) Select the most appropriate meaning of the underlined idiom in the given sentence.

This is an achievement of global significance, and the fact that the lads in green won at Twickenham is the icing on the cake.

- a) something that makes a good situation even better
- b) something that is achieved by luck
- c) something that is achieved by working hard
- d) something that turns around a bad situation

Correct Choice: a

Explanation:

The idiom THE ICING ON THE CAKE refers to something that makes a good situation better. The sentence talks about how the lads won at Twickenham and this added to the fact that the achievement was of global significance. Thus, (a) is the right answer.

Topic –Reading comprehension

(12-13) Directions: Read the following passage carefully and answer the questions that follow.

Solar and wind power are the glamorous twins of the clean-electricity revolution. It is thrilling to see a field of glistening panels absorbing the sun's energy or a vast turbine twirling above the ocean. Stationary power storage does not have quite the same allure. Nonetheless, the ability to stockpile energy on a massive scale will be of supreme importance if the world is to wean itself off fossil-fuel power plants. The technology is gradually getting cheaper and attracting investment. But more needs to be done to ensure that it sparks.

To see why storage is important, work backwards from the most common strategy to limit climate change. Plans typically reduce emissions from electricity generation by switching it away from fossil fuels, then electrify other carbon-belching activities, such as driving cars and heating buildings. Abundant, reliable, clean electricity is the foundation on which many green investments and policies rest. And to work well, clean electricity in turn depends on storage.

Nuclear plants could supply steady clean power, but they attract fierce opposition and are beset by cost overruns. Solar and wind are the fastest-growing _____. Today they account for 7% of global generation, twice the share in 2013. But the sun does not always shine and the wind may not blow. As the share of intermittent sources rises, so will demand for energy to offset swings in supply. In the short run, dirty coal and natural gas will have to provide flexibility. Eventually, however, storage must play that role, and the sooner the better. The aim is to capture solar and wind power when it is plentiful and release it as needed.

12) As per the passage, which of the following statements is true?

- a) The author believes that although renewable energy sources have become popular, they will not be able to replace fossil fuels.
- b) Solar and wind energy are not clean sources of energy.
- c) The opposition of nuclear energy is unjustified.
- d) The author believes that coal and natural gas will have to be used to meet the demand of energy in the absence of a steady supply of clean energy.

Correct Choice: d

Explanation:

(d) is the right answer. Refer to the lines: *As the share of intermittent sources rises, so will demand for energy to offset swings in supply. In the short run, dirty coal and gas will have to provide flexibility. Eventually, however, storage must play that role, and the sooner the better. The aim is to capture solar and wind power when it is plentiful and release it as needed.* The author seeks to convey that solar and wind energy are intermittent energy sources, which implies that they do not provide energy continuously. Additionally, we need to keep using coal and natural gas to meet the demand of energy that will be created once solar and wind energy become more common.

(a) is incorrect. The passage seeks to highlight the opposite. The author believes that as we move ahead in time, solar and wind energy will grow and replace fossil fuels.

(b) is incorrect. Solar and wind energy have been touted as examples of clean energy.

(c) is incorrect. Refer to the lines: *Nuclear plants could supply steady clean power, but they attract fierce opposition and are beset by cost overruns.*

13) What does the phrase 'the glamorous twins' imply?

- a) Solar power is just as good as wind energy.
- b) Wind energy is better than solar power.
- c) Both solar and wind power are an important part of clean energy.
- d) Solar energy is better than wind energy.

Correct Choice: c

Explanation:

(c) is the right answer. The sentence seeks to convey that solar and wind power are two aspects that have played a critical part in the clean energy revolution. It does not seek to compare solar and wind power. Therefore, the other options are incorrect.

Topic -connectors

14) In the question below, two sentences joined by a connector are given. The connector is highlighted in bold. From the options, choose the connector that can replace the highlighted word such that the meaning of the joined sentence does not change.

The idea was rejected because it would have proved too costly, moreover, difficulties arose with getting permission to use the land.

1. Consequently
2. Furthermore
3. Additionally
4. Therefore

- a) 1 and 2
- b) 1 and 3
- c) 1 and 4
- d) 2 and 3

Correct Choice: d

Explanation:

The sentences are complementary - the first tells us that the idea was rejected due to the high cost, and the second adds that difficulties arose with getting permission to use the land. FURTHERMORE and ADDITIONALLY can replace MOREOVER to convey the requisite meaning. Thus, (d) is the right answer.

CONSEQUENTLY and THEREFORE are used to show a cause-effect relationship, which is not the case here

Topic –error location

15) In the question below, a sentence is given divided into 3 parts, out of which one or more parts may contain an error. From the options, choose the combination of parts that need to be replaced with the phrases provided below. In case the sentence is correct as it is, and needs

Water blooms, or great concentrations of algae and (A)/ microscopic organisms, often develops on the surface, preventing (B)/ the light penetration and oxygen absorption necessarily for underwater life. (C)

1. Water blooms, or greatly concentrations of algae and
2. microscopic organisms, often develop on the surface, preventing
3. the light penetration and oxygen absorption necessary for underwater life.

- a) Only A and B
- b) Only B and C
- c) Only A and C
- d) All A, B and C

Correct Choice: b

Explanation:

A - no error. B - replace the singular verb DEVELOPS with the plural verb DEVELOP as the subject CONCENTRATIONS is plural. 2 can replace B. C - replace the adverb NECESSARILY with the adjective NECESSARY as it is being used to modify the noun PENETRATION and ABSORPTION. 3 can replace C. Thus, (b) is the right answer.

Quantitative Aptitude

Topic –problems on numbers

16) The cube of the difference of two numbers 'a' and 'b' is 27 and the product of these numbers is 40. Find the value of $(2a^2 + 2ab + 2b^2)$. Given $a > b$.

a) 224

b) 232

c) 258

d) 246

Correct Choice: c

Explanation:

According to the question,

$$(a - b)^3 = 27$$

$$(a - b) = 3$$

$$\text{Also, } ab = 40$$

$$\text{Therefore, } (a - b)^3 = a^3 - b^3 - 3ab(a - b)$$

$$\text{Or, } 27 = a^3 - b^3 - 3 \times 40 \times 3$$

$$\text{Or, } a^3 - b^3 = 387$$

$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

$$\text{Or, } 387 = 3 \times (a^2 + ab + b^2)$$

$$\text{Or, } (a^2 + ab + b^2) = 387/3 = 129$$

Therefore, $2(a^2 + ab + b^2) = 2 \times 129 = 258$

Hence, option c.

Topic -geometry

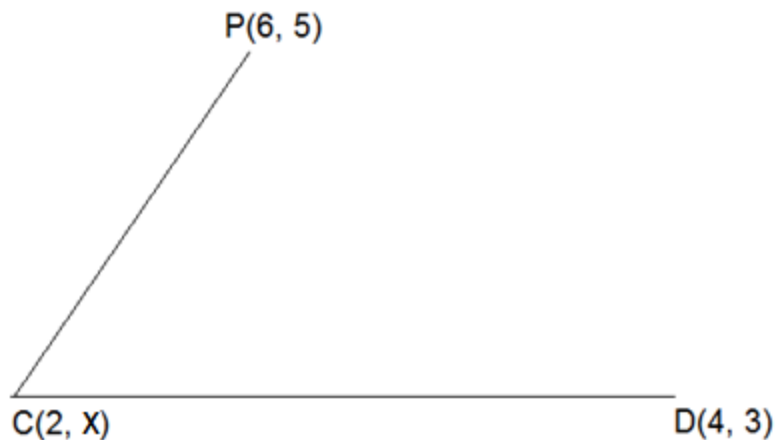
17) Find the length of the line AB whose length is twice the length of the line CD if the coordinates of the point C and D is $(2, x)$ and $(4, 3)$ respectively, where $x < 0$, and the distance of point C from point P having coordinates $(6, 5)$ is $4\sqrt{5}$ cm.

- a) $8\sqrt{15}$ cm
- b) $12\sqrt{7}$ cm
- c) $6\sqrt{5}$ cm
- d) $4\sqrt{10}$ cm

Correct Choice: d

Explanation:

According to the question,



Therefore, $\sqrt{\{(6 - 2)^2 + (5 - x)^2\}} = 4\sqrt{5}$

Or, $16 + (5 - x)^2 = 80$

Or, $25 - 10x + x^2 = 64$

Or, $x^2 - 10x - 39 = 0$

$$\text{Or, } x^2 - 13x + 3x - 39 = 0$$

$$\text{Or, } x(x - 13) + 3(x - 13) = 0$$

$$\text{So, } x = -3, 13$$

$$\text{Therefore, } x = -3$$

$$\text{Length of the line CD} = \sqrt{\{(4 - 2)^2 + (3 + 3)^2\}} = 2\sqrt{10} \text{ cm}$$

$$\text{Length of the line AB} = 2 \times 2\sqrt{10} = 4\sqrt{10} \text{ cm}$$

Hence, option d.

Topic -Discounts

18) Article 'A' is marked up by 20% and then sold after giving some discount. The loss of article 'B' is equal to the discount offered on article 'A'. If article 'A' and 'B' is sold at loss of 14% and 28% respectively and the cost price of article 'B' is Rs. 675 more than that of 'A', then find the cost price of article 'A'.

- a) Rs. 3540
- b) Rs. 3150
- c) Rs. 2850
- d) Rs. 3720

Correct Choice: b

Explanation:

Let the cost price of article 'A' be Rs. x

Therefore, selling price of article 'A' = Rs. $0.86x$

Marked price of article 'A' = Rs. $1.2x$

Discount given on article 'A' = $1.2x - 0.86x = \text{Rs. } 0.34x$

According to the question,

$$0.34x/0.28 - x = 675$$

$$\text{Or, } 0.06x = 189$$

$$\text{Or, } x = 189/0.06 = \text{Rs. } 3150$$

Hence, option b.

Topic –Time&work

19) 'A' takes 15 days less than 'B' while 'C' takes 30 days more than 'B' to complete a certain work alone. 'B' can complete 15% of work in 9 days. All of them started working together and left after completing 90% of the work. If the remaining work is completed by 'D' in 3 days, then find the total time taken to complete the whole work.

- a) 21 days
- b) 18 days
- c) 15 days
- d) 24 days

Correct Choice: a

Explanation:

Time taken by 'B' to complete the whole work alone = $9/0.15 = 60$ days

Time taken by 'A' to complete the whole work alone = $60 - 15 = 45$ days

Time taken by 'C' to complete the whole work alone = $60 + 30 = 90$ days

Let the total work = 180 units (L.C.M of 45, 60 and 90)

Efficiency of 'A' = $180/45 = 4$ units/day

Efficiency of 'B' = $180/60 = 3$ units/day

Efficiency of 'C' = $180/90 = 2$ units/day

Time taken by them to complete 90% of the work = $0.90 \times 180/(4 + 3 + 2) = 18$ days

Total time taken = $18 + 3 = 21$ days

Hence, option a.

Topic –Divisibility rules

20) If the number $163x52y$ is divisible by 45, then find the possible values of $(5x - 2y)$.

- a) 10
- b) 20
- c) 15
- d) 25

Correct Choice: c

Explanation:

Since, the whole number is divisible by 45 therefore the number is individually divisible by 5 and 9

The number is divisible by 5 therefore the unit digit can be 0 or 5

The number is divisible by 9, therefore the sum of the digits of the number is divisible by 9.

For, $y = 0$ $x = 1$

$$5x - 2y = 5 \times 1 - 2 \times 0 = 5$$

And, for $y = 5$, $x = 5$

$$\text{Therefore, } 5x - 2y = 5 \times 5 - 2 \times 5 = 15$$

Hence, option c.

Topic –geometry(circles)

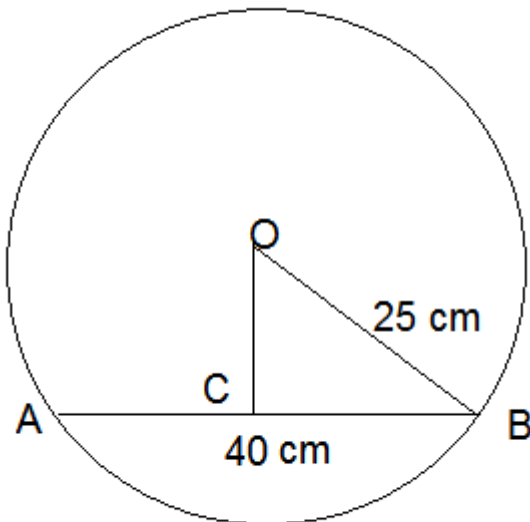
21) In a circle of radius 25 cm, find the perpendicular distance of a chord having the length of 40 cm, from the centre.

- a) 10 cm
- b) 15 cm
- c) 12 cm
- d) 20 cm

Correct Choice: b

Explanation:

According to the question,



Since the perpendicular from centre bisect the chord, therefore, $BC = 40/2 = 20$ cm

Therefore, $OC = \sqrt{(25^2 - 20^2)} = \sqrt{(625 - 400)} = \sqrt{225} = 15$ cm

Hence, option b.

Topic -algebra

22) If $(a + b + c) = 11$ and $a^3 + b^3 + c^3 - 3abc = 77$, then find the value of $5(ab + bc + ca)$

- a) 190
- b) 160
- c) 210
- d) 240

Correct Choice: a

Explanation:

$$(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2ac + 2bc \dots\dots\dots (1)$$

$$a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - ac - bc) \dots\dots\dots (2)$$

Putting the given values in equation (1) and (2) and subtracting equation

$$11^2 = a^2 + b^2 + c^2 + 2ab + 2ac + 2bc \dots\dots\dots (3)$$

$$77 = 11(a^2 + b^2 + c^2 - ab - ac - bc) \dots\dots\dots (4)$$

Subtracting equation (4) from (3) we get

$$114 = 3(ab + bc + ca)$$

$$\text{Or, } (ab + bc + ca) = 114/3 = 38$$

$$\text{Therefore, } 5(ab + bc + ca) = 5 \times 38 = 190$$

Hence, option a.

Topic -simplifications

23) The value of $\{3.6 + (7.2 \div 0.6) \times 0.5 - 6.6\} \times 5$ is

- a) 21
- b) 15
- c) 12
- d) 18

Correct Choice: b

Explanation:

$$\{3.6 + 12 \times 0.5 - 6.6\} \times 5$$

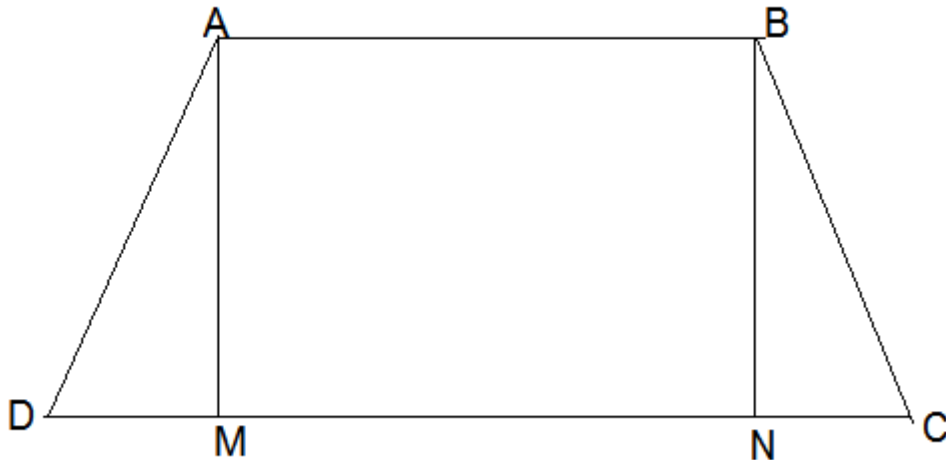
$$= \{3.6 + 6 - 6.6\} \times 5$$

$$= 15$$

Hence, option b.

Topic-mensuration

24) In the given fig. ABCD is a trapezium such that $AB \parallel CD$. $NC = 6$ cm, $AB = 10$ cm and $DM = NC$. AM and BN are two perpendiculars on the side CD . $DM = AM$. Find the area of the trapezium ABCD.



- a) 124 cm^2
- b) 108 cm^2
- c) 96 cm^2
- d) 84 cm^2

Correct Choice: c

Explanation:

According to the question,

$$DM = NC = AM = BN = 6 \text{ cm}$$

$$MN = AB = 10 \text{ cm}$$

$$\text{Area of } \triangle AMD \text{ and } \triangle BNC = 2 \times \left(\frac{1}{2}\right) \times 6 \times 6 = 36 \text{ cm}^2$$

Area of rectangle ABNM = $10 \times 6 = 60 \text{ cm}^2$

Area of trapezium ABCD = $60 + 36 = 96 \text{ cm}^2$

Hence, option c

Topic –Q1&Q2 comparison on discounts, mixtures& allegations

(25) In the question, two quantities I and II are given. You have to solve both the quantities to establish the correct relation between Quantity-I and Quantity-II and choose the correct option.

Quantity-I: Abhishek marked his goods 40% above cost price and sold it after two consecutive discount of $x\%$ and $(x + 5)\%$ and incurred overall loss of 16%. Find the value of x .

Quantity-II: A 720 ml of mixture contains milk and water in the ratio of 17:19 respectively. A certain amount of mixture is taken out and then 45 ml of milk and 15 ml of water is added into the remaining mixture so that the quantity of milk and water in the resultant mixture becomes same. Find the percentage of mixture taken out.

25)

- a) Quantity-I > Quantity-II
- b) Quantity-I < Quantity-II
- c) Quantity-I \leq Quantity-II
- d) Quantity-I = Quantity-II or No relation

Correct Choice: b

Explanation:

Quantity I:

Let cost price of the goods be Rs. 100

Marked price of the goods = $1.4 \times 100 = \text{Rs. } 140$

Selling price of the goods = $140 \times \{(100 - x)/100\} \times \{(100 - x - 5)/100\} = 0.84 \times 100$

$$(100 - x)(95 - x) = 6000$$

$$9500 - 195x + x^2 = 6000$$

$$x^2 - 195x + 3500 = 0$$

$$x^2 - 175x - 20x + 3500 = 0$$

$$x(x - 175) - 20 \times (x - 175) = 0$$

$$(x - 20)(x - 175) = 0$$

$$x = 20 \text{ or } x = 175$$

Since, x cannot be more than 100.

So, $x = 20\%$

Quantity I = 20%

Quantity II:

Amount of milk in the mixture = $17/36 \times 720 = 340$ ml

Amount of water in the mixture = $720 - 340 = 380$ ml

Let amount of mixture taken out be ' x ' ml

Amount of milk taken out = $17x/36$ ml

Amount of water taken out = $19x/36$ ml

According to question

$$(340 - 17x/36 + 45) = (380 - 19x/36 + 15)$$

$$x/18 = 40 - 30$$

$$x = 180$$

Desired percentage = $180/720 \times 100 = 25\%$

So, Quantity II = 25%

Therefore, Quantity II > Quantity I

Hence, option b.

TOPIC-Data sufficiency on problems on numbers

26) The question consists of two statements numbered “I and II” given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.

Find the value of the two-digit number.

Statement I: The sum of the digits of the number is 13 and product of the digits is 42.

Statement II: When the number is increased by 25% then its value is 28 more than the value of the number when its digits are reversed. The digit at unit place is 6.

- a) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
- b) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
- c) The data either in statement I alone or in statement II alone are sufficient to answer the question.
- d) The data given in both statements I and II together are not sufficient to answer the question.

Correct Choice: b

Explanation:

Let the two digits be x and y .

Statement I:

$$x + y = 13$$

$$xy = 42$$

$$(x - y)^2 = (x + y)^2 - 4xy$$

$$(x - y)^2 = 13 \times 13 - 4 \times 42 = 169 - 168 = 1$$

$$x - y = 1$$

So, $x = 6$ and $x = 7$ or $x = 7$ and $x = 6$

The two digit number can be 67 or 76.

So, data in statement I alone is not sufficient to answer the question.

Statement II:

Let the number be $(10a + b)$

According to statement,

$$1.25 \times (10a + b) = (10b + a) + 28$$

$$12.5a + 1.25b = 10b + a + 28$$

$$11.5a - 8.75b = 28$$

$$11.5a - 8.75 \times 6 = 28$$

$$11.5a = 80.5$$

$$a = 7$$

So, the number is 76

So, data in statement II alone is sufficient to answer the question

Hence, option b.

Topic –data sufficiency on averages

27) The question consists of two statements numbered “I and II” given below it. You have to decide whether the data provided in the statements are sufficient to answer the question.

Average weight of ‘x’ students of a class is ‘y’ kg. Find the value of ‘x’.

Statement I: When a student having weight 32 kg is added then the average weight of the class is increased by 1 kg.

Statement II: When 2 students weighing 33 kg each is added then the average weight of the class is increased by 2 kg.

- a) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question.
- b) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question.
- c) The data either in statement I alone or in statement II alone are sufficient to answer the question.
- d) The data given in both statements I and II together are not sufficient to answer the question.

Correct Choice: d

Explanation:

Let total number of students be ‘x’.

And, average weight of all the students be ‘y’ kg.

So, total weight of all the students = xy kg

Statement I:

$$(xy + 32)/(x + 1) = y + 1$$

$$xy + 32 = xy + x + y + 1$$

$$x + y = 31$$

So, statement I alone is not sufficient to answer the question.

Statement II:

$$(xy + 66)/(x + 2) = y + 2$$

$$xy + 66 = xy + 2x + 2y + 4$$

$$2x + 2y = 62$$

$$x + y = 31$$

So, statement II alone is not sufficient to answer the question.

Combining statement I and II, we cannot determine the answer.

Hence, option d.

Topic –problems on ages

28) The respective ratio of the present ages of Anjana to Anjani is 3:4, while respective ratio of the age of Anuj one year ago to the present age of Anju is 9:7. Difference between the ages of Akansha and Anju is 4 years. Present average age of Anjana, Anuj, Anjani and Anju is 45 years and 3 months. Find the present age of Akansha if Anuj is 7 years elder to Anjani.

- a) 44 years
- b) 46 years
- c) 38 years
- d) Either (b) or (c)

Correct Choice: d

Explanation:

Let the present ages of Anjana and Anjani are $3x$ years and $4x$ years respectively.

Present age of Anuj = $(4x + 7)$ years

Age of Anuj one year hence = $(4x + 6)$ years

Present age of Anju = $(4x + 6)/9 \times 7 = (28x + 42)/9$ years

Sum of the present ages of Anjana, Anjani, Anuj and Anju = $3x + 4x + 4x + 7 + (28x + 42)/9 = 4 \times 45.25$

$$x = 12$$

So the present age of Anju = 42 years

Present age of Akansha = either $42 + 4$ or $42 - 4 =$ either 46 years or 38 years

Hence, option d.

Topic -discounts

29) The marked price of a bike in two stores A and B is same. In store A, bike is available at 35% discount and in store B same bike is available at two successive discounts of $d\%$ and 20%. A man bought bike from store A at Rs. 10400. If man would have paid Rs. 864 more, he could have bought the same bike from store B. Find the discount 'd' allowed by store B on bike.

- a) 22%
- b) 18%
- c) 15%
- d) 12%

Correct Choice: d

Explanation:

Marked price of the bike in store A = $10400/0.65 =$ Rs. 16000

Selling price of bike at store B = $10400 + 864 =$ Rs. 11264

According to question,

$$16000 \times 0.8 \times [(100 - d)/100] = 11264$$

$$128 \times (100 - d) = 11264$$

$$100 - d = 88$$

$$d = 12\%$$

Hence, option d.

Topic –mixtures &allegations

30) A _____ litres mixture contains glycerine and water in the ratio 3:2, respectively. _____ % of mixture is taken out such that the taken out mixture contains _____ litres of glycerine.

The values given in which of the following options will fill the blanks in the same order in which is it given to make the statement true:

I. 120, 75, 54

II. 150, 40, 36

III. 160, 25, 30

a) All I, II and III

b) Only I and III

c) Only III

d) Only I and II

Correct Choice: d

Explanation:

For I:

Total quantity of mixture = 120 litres

75% of mixture = $0.75 \times 120 = 90$ litres

Quantity of glycerine in 90 litres of the mixture = $90 \times \frac{3}{5} = 54$ litres

Therefore, I can be the answer.

For II:

Total quantity of mixture = 150 litres

40% of the mixture = $0.40 \times 150 = 60$ litres

Quantity of glycerine in 40% of mixture = $60 \times \frac{3}{5} = 36$ litres

Therefore, II can be the answer.

For III:

Total quantity of mixture = 160 litres

25% of mixture = $0.25 \times 160 = 40$ litres

Quantity of glycerine in 25% of mixture = $40 \times \frac{3}{5} = 24$ litres

Therefore, III cannot be the answer.

Hence, option d.

Logical Reasoning

Topic -syllogisms

31) In the question below there are four statements followed by three conclusions I, II and III. You have to take the four given statements to be true even if they seem to be at variance from commonly known facts and then decide which of the given conclusions logically follows from the four statements disregarding commonly known facts.

Statements:

Each cart are bag.

Every bag are basket.

Some cart are big.

Only few cart is main

Conclusions:

I. Some big are not basket.

II. Some basket are cart.

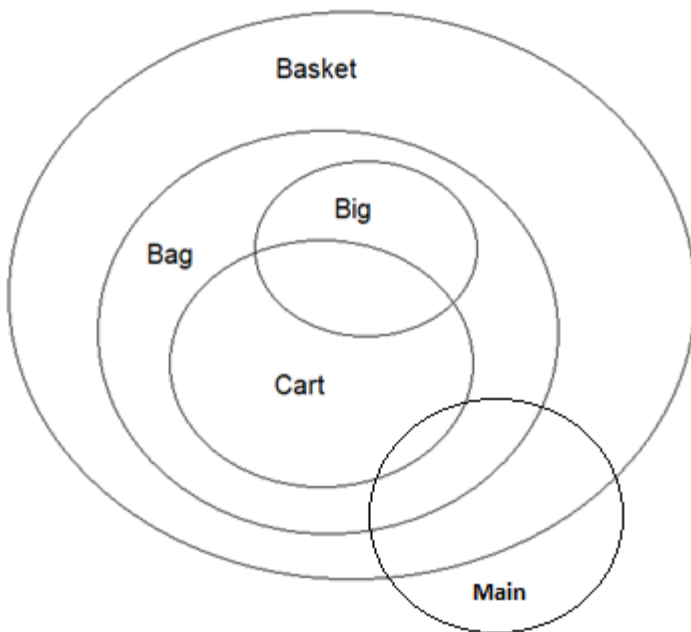
III. Some bags are main.

- a) Both conclusion I and conclusion II follow.
- b) Only conclusion I follows
- c) Neither conclusion I nor conclusion III follows
- d) Both conclusion II and conclusion III follow

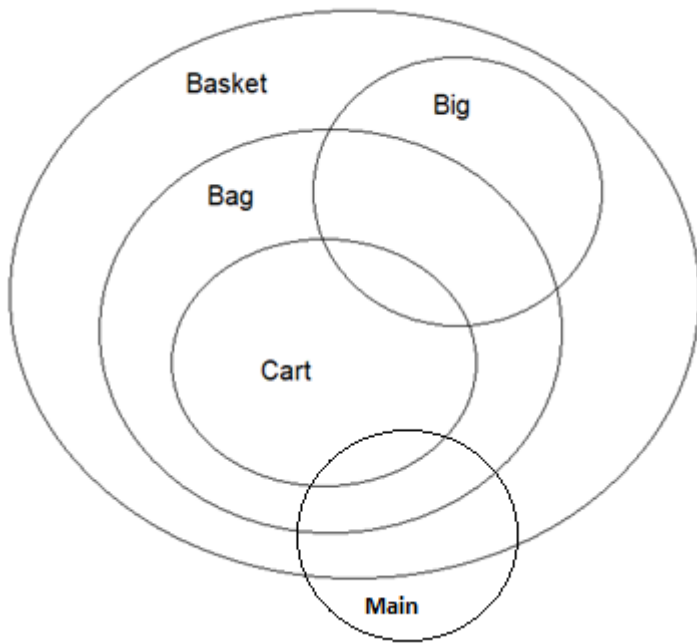
Correct Choice: d

Explanation:

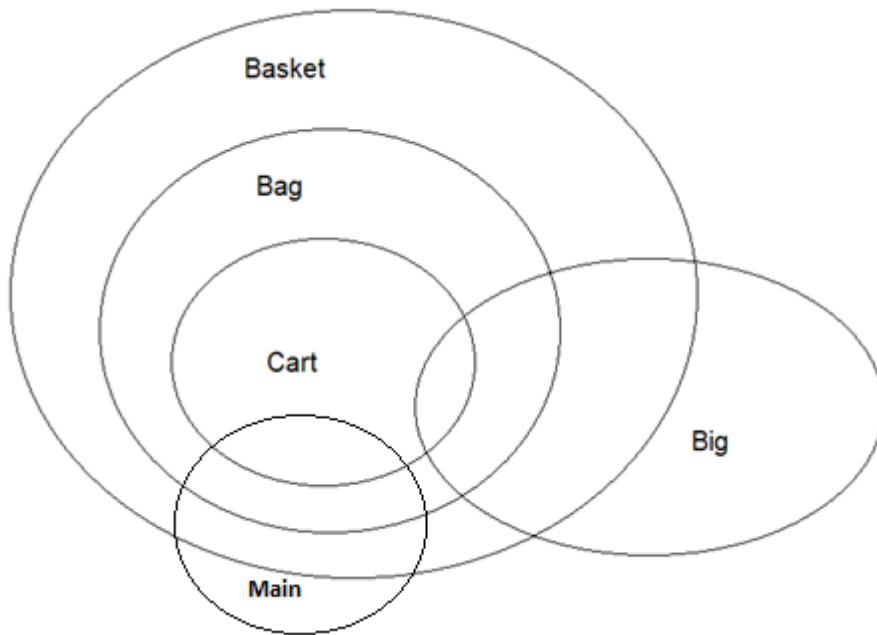
Following figure can be formed:



Or



Or



From the figure, both conclusion II and conclusion III follow.
Hence, option d.

Topic –logical deduction(statements-arguments)

32) In the question below, an argument is given, followed by three statements. From the options, choose the statements that can combine to produce the argument.

Argument: Digital technology can be the key to providing quality public services.

1.Digital technology can rapidly transform how countries provide services such as education and health to their citizens.

2.Countries must also anticipate and manage the associated risks of the digital revolution.

3.Managed wisely, digital technology can ensure effectiveness and transparency in the delivery of public services.

- a) Only 1 and 2
- b) Only 3
- c) Only 1 and 3
- d) Only 2 and 3

Correct Choice: c

Explanation:

(c) is the right answer. The premise talks about how digital technology can play a critical role in providing quality public services. It can be inferred by putting 1 and 3 together. 1- talks about how digital technology can cause transformation how public services are delivered. 3-talks about how it can ensure effectiveness and transparency. 2 is incorrect as it talks about anticipating the possible negative effects of digital technology.

Topic –North face sitting with blood relations

(33-35) Directions: Answer the questions based on the information given below.

There are seven persons P, Q, R, S, T, U and V in the family of three generations. There is a couple in each generation. All of them are sitting in a row facing north. No single parent has a child.

V's wife sits at one of the extreme ends.

P sits second to the left of her son, who is not V.

Q sits second to the left of U, who is in 3rd generation.

Neither U nor P sits at any end.

No siblings are sitting adjacent to each other.

S is the nephew of the one, who sits to the immediate right of Q.

R is brother-in-law of T, who sits at one of the extreme ends.

Q is not in 3rd generation.

P is not the wife of Q.

T is not the son of Q.

33) Who among the following sits at the extreme left end?

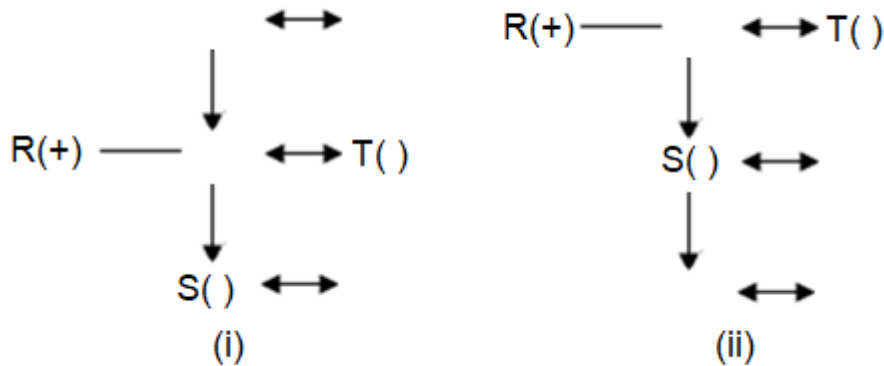
- a) U
- b) P
- c) Q
- d) S

Correct Choice: c

Explanation:

Now, S is the nephew of one, who sits to the immediate right of Q. R is brother-in-law of T, who sits at one of the extreme ends. Q sits second to the left of U, who is in 3rd generation. P is not the wife of Q.

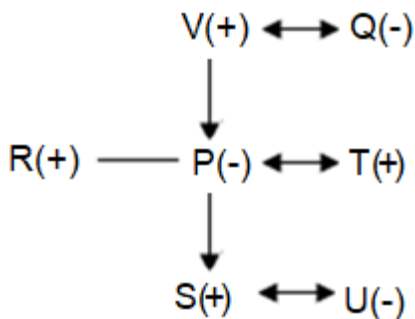
So, we have two cases,



V's wife sits at one of the extreme ends. P sits second to the left of her son, who is not V. So, we have two arrangements,

T	Q	R	U	P	S	V
Q	R	U	P	V	S	T

Neither U nor P sits at any end. No siblings are sitting adjacent to each other. So, R cannot be in 1st generation. Also, V is not son of P. T is not the son of Q. So, we have,



Q	R	U	P	V	S	T
---	---	---	---	---	---	---

Q sits at the extreme end.

Hence, option c.

34) Who is married to U?

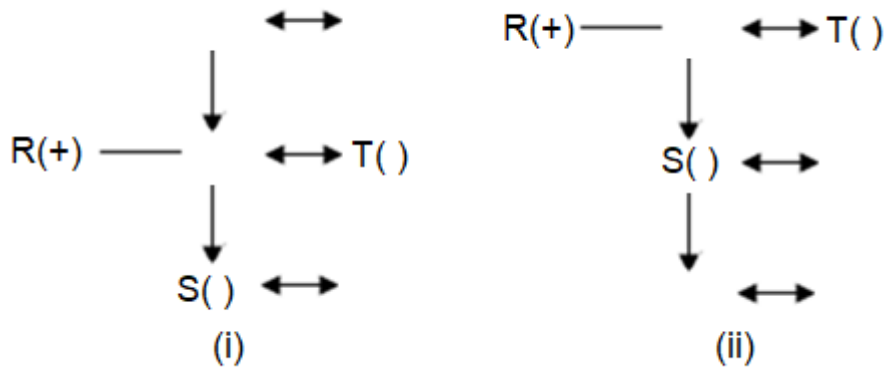
- a) S
- b) P
- c) Q
- d) V

Correct Choice: a

Explanation:

Now, S is the nephew of one, who sits to the immediate right of Q. R is brother-in-law of T, who sits at one of the extreme ends. Q sits second to the left of U, who is in 3rd generation. P is not the wife of Q.

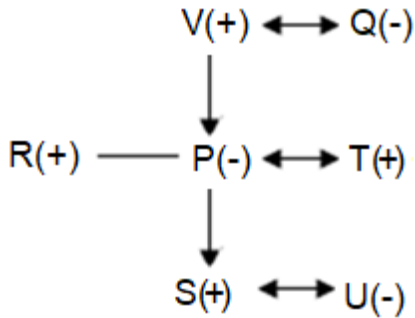
So, we have two cases,



V's wife sits at one of the extreme ends. P sits second to the left of her son, who is not V. So, we have two arrangements,

T	Q	R	U	P	S	V
Q	R	U	P	V	S	T

Neither U nor P sits at any end. No siblings are sitting adjacent to each other. So, R cannot be in 1st generation. Also, V is not son of P. T is not the son of Q. So, we have,



Q	R	U	P	V	S	T
---	---	---	---	---	---	---

S is married to U.

Hence, option a.

35) Who sits in the middle of the row?

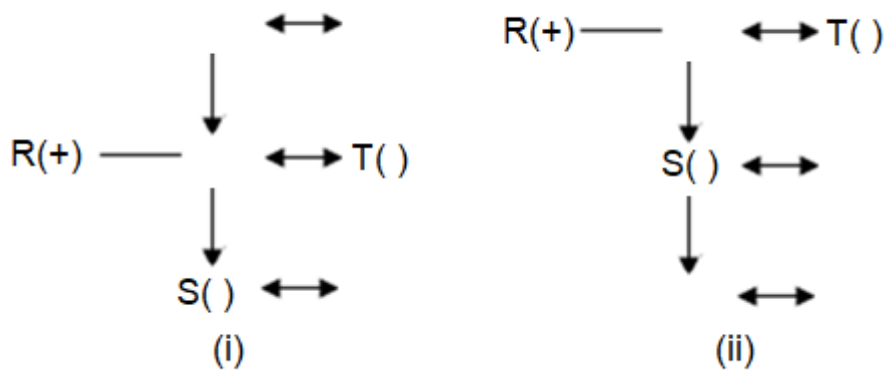
- a) Q
- b) V
- c) P
- d) R

Correct Choice: c

Explanation:

Now, S is the nephew of one, who sits to the immediate right of Q. R is brother-in-law of T, who sits at one of the extreme ends. Q sits second to the left of U, who is in 3rd generation. P is not the wife of Q.

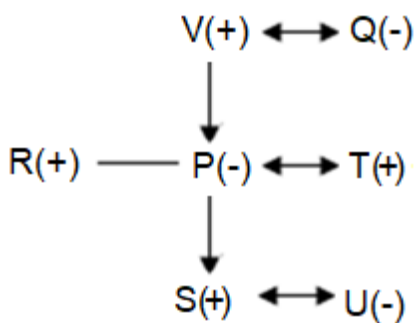
So, we have two cases,



V's wife sits at one of the extreme ends. P sits second to the left of her son, who is not V. So, we have two arrangements,

T	Q	R	U	P	S	V
Q	R	U	P	V	S	T

Neither U nor P sits at any end. No siblings are sitting adjacent to each other. So, R cannot be in 1st generation. Also, V is not son of P. T is not the son of Q. So, we have,



Q	R	U	P	V	S	T
---	---	---	---	---	---	---

P sits in the middle of the row.

Hence, option c.

Topic –Coding-decoding

(36-38) Directions: Answer the following questions based on the information given below.

In a code language,

“With Trade People Into” is coded as “F#5, O\$15, S*5, J\$8”

“Shift Beside Culture Various” is coded as “I*20, B&19, V&5, F#5”

“Truth Some Belong News” is coded as “F#7, P\$5, S*8, F\$19”

“Often Chances Deal Mercy” is coded as “I&19, G*14, F*25, F\$12”

36) What is the code for ‘KITES’?

- a) J*23
- b) J\$20
- c) I&15
- d) J*19

Correct Choice: d

Explanation:

There are 4 types of symbols in the code \$, *, # and &. ‘\$’ is used for the words containing 4 letters, ‘*’ is used for the words containing 5 letters, ‘#’ is used for the words containing 6 letters, ‘&’ is used for the words containing 7 letters. The number in each code is the number representing last letter in alphabetical series. The alphabet in the code is the succeeding alphabet of the second letter of the word.

Example -

‘WITH’

There are four letters in the word. So, the symbol would be ‘\$’.

Now, last letter is H. So, the number used would be 8.

The second letter is I. So, the alphabet would be ‘J’

Therefore, the code for 'WITH' is 'J\$8'.

Now, the code for 'KITES' is 'J*19'.

Hence, option d.

37) What would be word for "L\$20"?

- a) JOINT
- b) NEST
- c) PKNT
- d) FRESH

Correct Choice: c

Explanation:

There are 4 types of symbols in the code \$, *, # and &. '\$' is used for the words containing 4 letters, '*' is used for the words containing 5 letters, '#' is used for the words containing 6 letters, '&' is used for the words containing 7 letters. The number in each code is the number representing last letter in alphabetical series. The alphabet in the code is the succeeding alphabet of the second letter of the word.

Example -

'WITH'

There are four letters in the word. So, the symbol would be '\$'.

Now, last letter is H. So, the number used would be 8.

The second letter is I. So, the alphabet would be 'J'

Therefore, the code for 'WITH' is 'J\$8'.

"L\$20" is coded for 'PKNT'.

Hence, option c.

38) What is the code for “YOGURT”?

- a) U&18
- b) P#20
- c) K#5
- d) P#24

Correct Choice: b

Explanation:

There are 4 types of symbols in the code \$, *, # and &. '\$' is used for the words containing 4 letters, '*' is used for the words containing 5 letters, '#' is used for the words containing 6 letters, '&' is used for the words containing 7 letters. The number in each code is the number representing last letter in alphabetical series. The alphabet in the code is the succeeding alphabet of the second letter of the word.

Example -

'WITH'

There are four letters in the word. So, the symbol would be '\$'.

Now, last letter is H. So, the number used would be 8.

The second letter is I. So, the alphabet would be 'J'

Therefore, the code for 'WITH' is 'J\$8'.

The code for 'YOGURT' is 'P#20'

Hence, option b.

Topic –logical deduction(statements-arguments)

39)In the question below, an argument is given, followed by three statements. From the options, choose the statements that can combine to produce the argument.

Argument: It is important for coffee farmers to find ways to increase profits.

1. Some 80% of the world's coffee is grown on 25 million smallholder farms and for these producers, coffee typically represents the main, or even the only, source of income.
2. As one of the world's most popular beverages, coffee is crucial to the livelihoods of over 125 million people in more than 50 countries.
3. For smallholders, a bad crop or low prices translates into severe economic strain.

- a) Only 1 and 2
- b) Only 3
- c) Only 1 and 3
- d) Only 2 and 3

Correct Choice: c

Explanation:

(c) is the right answer. The argument states that coffee farmers need to find ways to increase their profits. It can be inferred by putting 1 and 3 together. 1- talks about how coffee is a major source of income for a 25 million smallholder farms. 3-talks about how a bad crop can lead to financial trouble for these farmers. Thus, they it is important for these farmers to find ways to increase profit. 2 is incorrect as it talks about the significance of coffee.

Topic –data sufficiency on blood relations

40) The question given below consists of two statements numbered I and II given below it. You have to decide whether the data provided in the statements are sufficient to answer the question. Read all the statements and give answer.

There are five members M, P, R, T and U in the three-generation family. No single parent has a child. How is P related to M?

I. M is daughter-in-law of U. R is mother of T.

II. T is father of P, who is unmarried. R is mother-in-law of M.

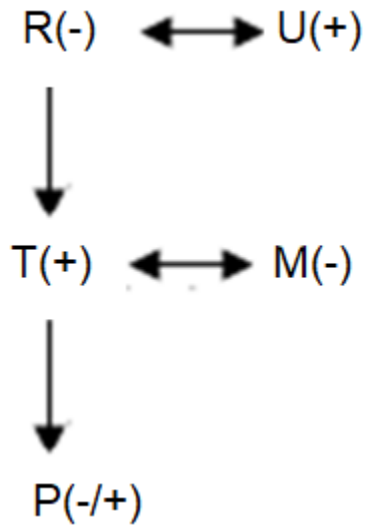
- a) The data in statement I alone are sufficient to answer the question, while the data in statement II alone are not sufficient to answer the question
- b) The data in statement II alone are sufficient to answer the question, while the data in statement I alone are not sufficient to answer the question
- c) The data either in statement I alone or in statement II alone are sufficient to answer the question
- d) The data given in both statements I and II together are not sufficient to answer the question

Correct Choice: d

Explanation:

Now, from statement I alone, M is daughter-in-law of U. R is mother of T.

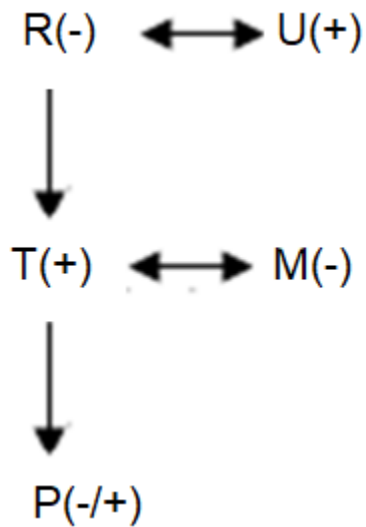
So, we have,



So, P can be son or daughter of M.

Therefore, statement I alone is not sufficient.

Now, from statement II alone, T is father of P, who is unmarried. R is mother-in-law of M. So, we have,



So, P can be son or daughter of M.

Therefore, statement II alone is not sufficient.

By combining statement I and II, we cannot determine the relation of P with that of M.

Hence, option d.

Topic –counting the figures

41) How many triangles are there in the following figure?



- a) 5
- b) 2
- c) 6
- d) 7

Correct Choice: a

Explanation:

There are total 5 triangles present in the figure.

Hence, option a.

Topic –logical venn diagrams type-1

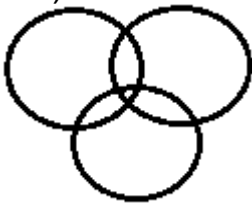
42) Select the Venn diagram that best illustrates the relationship between the following classes:

Doctors, Entrepreneurs, Men

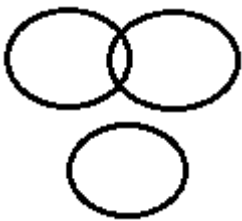
a)



b)



c)



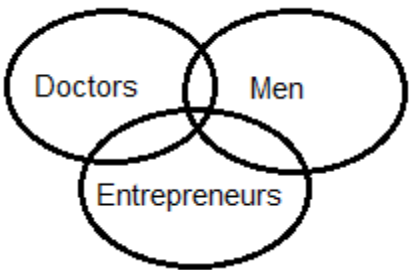
d)



Correct Choice: b

Explanation:

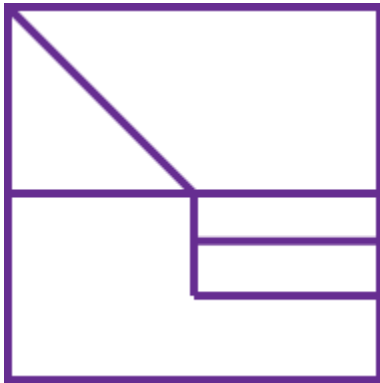
Following Venn diagram represents the relation between worker, graduate and educated

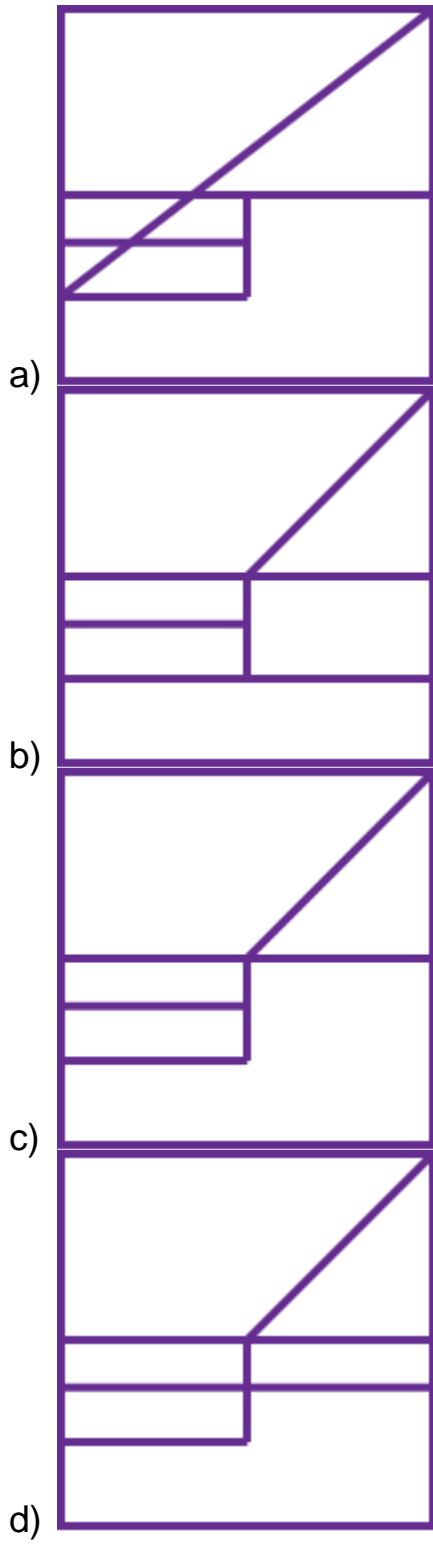


Hence, option b.

Topic –mirror image

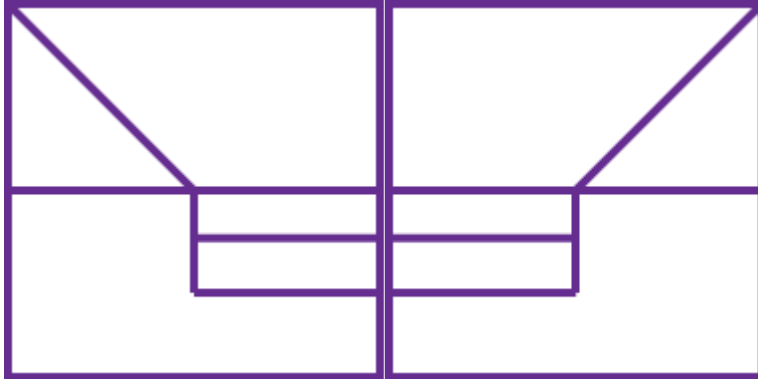
43) Identify the mirror image of the following figure when the mirror is placed to the right of the figure.





Correct Choice: c

If mirror is placed to the right of the figure.



Hence, option c.

Topic –matrix coding

(44) In the question, a word is represented by only one set of number as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by 2 classes of alphabets as in two matrices given below. The columns and rows of matrix I are numbers from 0-4 and that of matrix II are numbers from 5-9. A letter from this matrix can be represented 1st by its row and next by its column. Ex- “A” can be represented by 00, 75 etc. and “B” can be represented by 20, 44, 56, 76 etc. Similarly, you have to identify the set of word “DISCOUNTABLE”.

Matrix I

	0	1	2	3	4
0	A	O	V	Y	T
1	Y	J	G	N	K
2	B	Z	I	E	C

3	U	H	S	Y	P
4	A	J	F	Q	B

Matrix II

	5	6	7	8	9
5	G	B	S	K	F
6	P	J	F	S	N
7	A	B	L	C	S
8	K	Y	R	D	C
9	P	H	G	E	R

- a) 88, 22, 57, 24, 01, 30, 13, 04, 00, 44, 77, 23
- b) 88, 22, 57, 24, 01, 30, 13, 04, 68, 44, 77, 23
- c) 88, 22, 57, 24, 01, 34, 13, 04, 00, 44, 77, 23
- d) 88, 22, 57, 24, 10, 30, 13, 04, 00, 44, 77, 23

Correct Choice: a

Explanation:

As the digits of the numbers represented by columns and rows respectively,

D	I	S	C	O	U	N	T	A	B	L	E
		57, 68, 79, 32	24, 78, 89	01	30	13, 69	04	00, 75, 40	56, 20, 76, 44	77	23, 98

Hence, option a.

Topic –blood relations

45) If sister of B's father is the wife of N's mother's brother. How is mother of B related to K, who is N's maternal grandmother's only daughter-in-law?

- a) Sister
- b) Sister-in-law
- c) Mother
- d) Daughter-in-law

Correct Choice: b

Explanation:

If sister of B's father is the wife of N's mother's brother, so mother of B must be the sister-in-law of K, who is N's maternal grandmother's only daughter-in-law.

Hence, option b.

General Awareness

Topic-Famous Air ports

46) 'Jharsuguda Airport' is located in which state of India?

- a) Jharkhand
- b) Sikkim
- c) Odisha
- d) Chhattisgarh

Correct Choice: c

Explanation:

The state assembly of Odisha has passed a unanimous resolution to name the newly-built Jharsuguda airport after noted freedom fighter Veer SurendraSai.

Topic - Computers

47) What is the base in “Hexadecimal Number System”?

- a) 16
- b) 8
- c) 1
- d) 0

Correct Choice: a

Explanation:

The hexadecimal system is Base Sixteen. As its base implies, this number system uses sixteen symbols to represent numbers.

Topic –famous Rivers

48) What is the name of river Ganga when it enters into Bangladesh?

- a) Meghna
- b) Padma
- c) Hugli
- d) Teesta

Correct Choice: b

Explanation:

After entering Bangladesh, the main branch of the Ganges is known as the Padma. The Padma is joined by the Jamuna River, the largest distributary of the Brahmaputra.

Topic –countries & continents

49) “Great Barrier Reef” is located in which continent?

- a) South America
- b) Africa
- c) Australia
- d) North America

Correct Choice: c

Explanation:

The Great Barrier Reef is the world's largest coral reef system located in the Coral Sea, off the coast of Queensland, Australia.

Topic –countries& capitals

50) Which of the following city is capital of Jordan?

- a) Amman
- b) Rabat
- c) Istanbul
- d) Tashkent

Correct Choice: a

Explanation:

Amman is the capital and most populous city of Jordan, and the country's economic, political and cultural center.

Technical (Computers)

Topic- Initialization of Pointer Arrays

51) What will be the output of the following C code?

```
#include <stdio.h>

void main()
{
char *a[10] = {"hi", "hello", "how"};
int i = 0;
for (i = 0; i < 10; i++)
printf("%s", a[i]);
}
```

- a) hi hello how Segmentation fault
- b) hi hello how null
- c) hey hello how Segmentation fault
- d) hi hello how followed by 7 nulls

Correct Choice: d

Topic - Pointers and Arrays

52) What will be the output of the following C code?

```
#include <stdio.h>

int main()
{
    int ary[4] = {1, 2, 3, 4};
    int *p = ary + 3;
    printf("%d %d\n", p[-2], ary[*p]);
}
```

- a) 2 3
- b) Compile time error
- c) 2 4
- d) 2 somegarbagevalue

Correct Choice: d

Topic - Command Line Arguments

53) What will be the output of the following C code (run without any command line arguments)?

```
#include <stdio.h>

int main(int argc, char *argv[])
{
while (argc--)
printf("%s\n", argv[argc]);
return 0;
}
```

- a) Compile time error
- b) Executable filename
- c) Segmentation fault
- d) Undefined

Correct Choice: b

Topic - Formatted Output

54) . What will be the output of the following C code?

```
#include <stdio.h>

int main()
{
    char *s = "myworld";
    int i = 9;
    printf("%*s", i, s);
}
```

- a) myworld
- b) myworld(note: spaces to the left of myworld)
- c) myworld (note:followed by two spaces after myworld)
- d) Undefined

Correct Choice: b

Topic -Ungetc

55) What is the syntax of ungetc()?

- a) void ungetc(int c, FILE *fp)
- b) int ungetc(int c, FILE *fp)
- c) int ungetc(String c, FILE *fp)
- d) int getc(int c, FILE *fp)

Correct Choice: b

Topic -Character Class Testing & Conversions

56) Which is true about `isupper(c)`, where `c` is an int that can be represented as an unsigned?

char or EOF.`isupper(c)` returns

- a) Non-zero if `c` is upper case
- b) 0 if `c` is not upper case
- c) Nothing
- d) Both Non-zero if `c` is upper case & 0 if `c` is not upper case

Correct Choice: c

Topic -Random Number Generation

57) What will be the output of the following C code?

```
#include <stdio.h>

int main()
{
    srand(time(NULL));
    printf("%d\n", rand());
    return 0;
}
```

- a) Compile time error
- b) An integer in the range 0 to RAND_MAX
- c) A double in the range 0 to 1
- d) A float in the range 0 to 1

Correct Choice: b

Topic - Sizeof Keyword

58) Which among the following statement is right?

- a) $\text{sizeof}(\text{structstemp}^*) > \text{sizeof}(\text{union utemp}^*) > \text{sizeof}(\text{char } ^*)$
- b) $\text{sizeof}(\text{structstemp}^*) < \text{sizeof}(\text{union utemp}^*) < \text{sizeof}(\text{char } ^*)$
- c) $\text{sizeof}(\text{structstemp}^*) = \text{sizeof}(\text{union utemp}^*) = \text{sizeof}(\text{char } ^*)$
- d) the order Depends on the compiler

Correct Choice: b

Topic - Enums

59) What will be the output of the following C code?

```
main()
{
enumresut {pass, fail};
enum result s1,s2;
    s1=pass;
    s2=fail;
printf("%d",s1);
}
```

- a) error
- b) pass
- c) fail
- d) 0

Correct Choice: a

Explanation: The code shown above results in an error, stating : storage size of s1 and s2 unknown. There is an error in the declaration of these variables in the statement: enum result s1,s2;

Topic - Localization

60) Select the correct statement.

- a) LC_MONETARY affects the monetary information
- b) LC_MONETARY does not affect the monetary information
- c) LC_ALL does not set everything
- d) LC_CTYPE affects only one character functions

Correct Choice: a

Explanation:

LC_MONETARY is the macro defined under header file locale.h which affects the monetary information provided by localeconv function.

Topic - General Utilities

61) Which statement is correct work reference to endptr?

```
doublestrtod(const char *nptr, char **endptr);
```

- a) A pointer to the starting string is stored in the object pointed to by endptr, provided that endptr is a null pointer
- b) A pointer to the final string is stored in the object pointed to by endptr, provided that endptr is not a null pointer
- c) A pointer to the final string is stored in the object pointed to by endptr, provided that endptr is a null pointer
- d) A pointer to the starting string is stored in the object pointed to by endptr, provided that endptr is not a null pointer

Correct Choice: b

Explanation:

If endptr is not NULL then endptr stores the pointer to a character after the last character.

Topic - DMA Functions, Memory Leak, Dangling Pointers

62) What will be the output of the following C code if it is executed on a 32 bit processor?

```
#include<stdio.h>
#include<stdlib.h>
int main()
{
int *p;
    p = (int *)malloc(20);
printf("%d\n", sizeof(p));
free(p);
return 0;
}
```

- a) 2
- b) 4
- c) 8
- d) Junk value

Correct Choice: b

Explanation: The size of a pointer is 2 bytes on a 16 bit platform, 4 bytes on a 32 bit platform and 8 bytes on a 64 bit platform.

Topic - Variable Argument Lists

63) The three macros defined by stdarg.h is _____

- a) start(), arg() and end()
- b) var_start(), var_arg() and var_end()
- c) va_start(), va_arg() and va_end()
- d) v_start(), v_arg() and v_end()

Correct Choice: c

Explanation:

The header file stdarg.h has three macros defined in it. They are va_start(), va_arg() and va_end(). va_list is a variable type that holds information needed by the three macros.

Topic - Date and Time Function

64) What will be the output of the following C code if the system time is 4:27 PM?

```
#include<stdio.h>
#include<time.h>
int main()
{
    struct tm *ptr;
    time_t t;
    charstr[100];
    t = time(NULL);
    ptr = localtime(&t);
    strftime(str,100,"%H %p %M minutes",ptr);
    puts(str);
    return 0;
}
```

- a) 16 27 minutes
- b) 4 27 minutes
- c) 16 PM 27 minutes
- d) 4 PM 27 minutes

Correct Choice: c

Explanation:

%H is a format specifier used to represent the hours (0-23) and %I specifies the hours in the format(0-12), %p is used to specify AM or PM, %M is used to specify the minutes. Hence output will be: 16 PM 27 minutes

Topic - Implementation-Defined Limits

65) What will be the output of the following C code?

Maximum value of int = 1000

Maximum value of float = 5000

Maximum value of short int = 327

Minimum value of short int = -328

```
#include<stdio.h>
```

```
#include<limits.h>
```

```
#include<float.h>
```

```
main()
```

```
{
```

```
shortint d;
```

```
    d=INT_MAX + FLT_MAX;
```

```
printf("%d",d);
```

```
}
```

a) error

b) 6000

c) 327

d) -328

Correct Choice: c

Explanation:

Since the data type in which we store the result of the expression `INT_MAX + FLT_MAX` is of the type short int, the output of the code shown above will be the maximum of short int. Hence the output is 327.