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CREATING CIVIL SERVANTS FOR THE NATION



**ANSWER OF OCS (2023)
PRELIMINARY EXAMINATION (GS-I)**

PRELIMINARY ANSWERS OF GS-II OCS- 2023

Direction (Q. Nos. 1-10) : Read the following passage and answer the questions that follow. Your answers to these questions should be based on the passage only :

Everyone is fascinated by identical twins : they look the same even advanced digital imaging systems sometimes fail to tell them apart - and yet they have different personalities and abilities. Literature and detective stories depend upon them for providing a plot twist or a mystery. In reality, too, there have been impersonating the other for a joke, to escape punishment or to advance a romantic interest. They may have the same eyes, the same hair colour, the same smile, but one will be shy and the other more outgoing, or one cleverer or funnier or kinder than the other and this despite their having the same DNA. They do not, however, have the same fingerprints, which are believed to be determined by environmental factors, twins like spending time with each other - often to the exclusion of others. In fifty percent of cases, they even develop their own secret language, furthermore, it is commonly believed that they have the ability to communicate telepathically so that, for instance, one is able to draw a picture of what the other is thinking. There have been innumerable claims that a twin has shared the physical or mental pain of the other - known as 'crisis telepathy' even when they could not have known it was happening. Monozygotic twins - who share everything before birth usually share everything after birth too : the same tastes in food, music, sport or politics... One might think that this could be explained by the fact that parents often give their new-born twins confusingly similar names, continue to dress them exactly alike until they are well into their teens, and generally treat them in the same way throughout their upbringing. However, there are well-documented cases of identical twins brought up separately from birth who nonetheless made the same decisions and life choices. In the 1980s, there was the much-publicised case of the identical twins 'Jim' brothers. Born in Ohio, USA in 1939, Jim Springer and Jim Lewis were put up for adoption as babies and raised by different couples, who happened to give them the same first name. When Jim Springer reconnected with his brother at age 39 in 1979, a string of other similarities and coincidence was discovered. Both men were six feet tall and weighed 180 pounds. Growing up, they'd both had dogs named Toy and taken family vacations on the same beach in Florida. As young men, they'd both married women named Linda, and then divorced them. Their second wives were both named Betty. They named their sons James Alan and James Allan. They'd both served as part-time sheriffs, enjoyed home carpentry projects, and suffered from severe headaches. In August every year, thousands of twins descend on a town in Ohio called Twinsburg, named by identical twin brothers nearly two centuries ago. The Twins Days festival is a three-day event consisting of talent shows and look-alike contests that has become one of the world's largest gatherings of twins. There have also been other festivals in the UAE, Australia, France and Nigeria. The latter country has a large proportion of twins in its population: one in 22 births to the Yoruba people in Nigeria produce twins, identical or fraternal, which is a much higher incidence than anywhere else in the world. This has been attributed to the eating of yams, but the theory is disputed. Biomedical researchers descend on these events, regarding them as a precious opportunity to conduct survey and experiments. Scientists study twins in order to collect evidence for the age-old nature versus nurture debate: how much of their behaviour is hereditary and how much conditioned by their environment; what are people actually born with and what is caused by experience? Because identical twins come from a single fertilized egg that splits in two, and share virtually the same genetic code, any differences between them must be due to environmental factors. Studying the differences between identical twins to pinpoint the influence of environment, and comparing identical twins with fraternal ones to measure the role of inheritance has been crucial for understanding the interplay of nature and nurture in determining our personalities, behaviour and vulnerability to disease .

1. Identical Twins who look the same are different in which aspect?

- (A) Clothes
- (B) Personalities
- (C) Imaging systems
- (D) Complexion

Answer: (B)

Explanation

The passage states that while identical twins may have the same physical features, such as eyes, hair color, and smile, they often differ in personality traits. One may be more outgoing, while the other may be shy. This shows that personality is influenced by both genetics and environmental factors.

2. How is the difference between the two identical twins helpful to authors?

- (A) Provide a story
- (B) Provide a character
- (C) Provide a plot twist
- (D) Provide romance

Answer: (C)

Explanation

The passage highlights that literature and detective stories frequently use identical twins as a device to create unexpected twists in the plot. Their identical appearance but different behaviors make them ideal for stories involving mistaken identity, deception, or mystery.

3. Which difference in two identical twins is determined by external factors?

- (A) Hair colour
- (B) Fingerprints
- (C) Smile
- (D) Eyes

Answer: (B)

Explanation

According to the passage, while identical twins share almost the same genetic code, their fingerprints are unique because they are shaped by environmental influences in the womb.

4. What percent of identical twins develop their own secret language?

- (A) Can't say
- (B) 30 percent
- (C) 50 percent
- (D) All of the above

Answer: (C)

Explanation

The passage states that in 50% of cases, identical twins develop a secret language that only they understand.

5. When one twin is able to share the physical or mental pain without even being communicated, it is known as

- (A) intuition
- (B) crisis telepathy

- (C) vibration
- (D) teleportation

Answer: (B)

Explanation

The passage refers to crisis telepathy, where one twin experiences the pain or distress of the other even when they are physically apart.

6. What do we call the twins, who share everything before birth ?

- (A) Monozygotic
- (B) Fraternal
- (C) Dizygotic
- (D) Monoamniotic

Answer: (A)

Explanation

Monozygotic twins (also known as identical twins) originate from a single fertilized egg that splits into two embryos.

7. Which festival has become one of the world's largest gathering of twins?

- (A) Ohio
- (B) Twins
- (C) The Twin Days
- (D) Twinsburg

Answer: (D)

Explanation

The passage mentions the Twins Days Festival held in Twinsburg, Ohio, as one of the world's largest gatherings of twins.

8. Which country has a large proportion of twin population?

- (A) Nigeria
- (B) USA
- (C) France
- (D) UAE

Answer: (A)

Explanation

The passage states that Nigeria, particularly among the Yoruba people, has one of the highest rates of twin births in the world. This means that more twins are born there compared to other populations globally.

9. What is the reason of the high rate of twins produced by the Yoruba people?

- (A) Culture
- (B) Marital status
- (C) Eating habits
- (D) Dance and music

Answer: (C)

Explanation

The passage suggests that the high rate of twin births among the Yoruba people may be linked to their diet, particularly the consumption of yams. Some researchers believe yams contain natural

compounds that increase the likelihood of multiple births, although this theory remains disputed.

10. Biomedical scientists conduct experiments in these events to collect which evidence?

- (A) Law and legal issues
- (B) Nature vs nurture debate
- (C) Climate change
- (D) LGBTQ+ rights

Answer: (B)

Explanation

Scientists study identical twins to explore the nature vs. nurture debate, which seeks to determine how much of a person's behavior, personality, and health is influenced by genetics (nature) versus environment (nurture). Since identical twins have the same DNA but can develop different traits, studying them helps researchers understand the impact of upbringing, lifestyle, and external conditions on human development.

Direction (Q. Nos. 11-16) : Read the following passage to answer the question.

Ecosystems provide people with a variety of goods and services, food, clean water, clean air, flood control, soil stabilization, pollination, climate regulation, spiritual fulfilment and aesthetic enjoyment, to name just a few. Most of these benefits are either irreplaceable or the technology necessary to replace them is prohibitively expensive. For example, potable freshwater can be provided by desalinating sea water, but only at great cost. The rapidly expanding human population has greatly modified the earth's ecosystem to meet their increased requirements of some of the goods and services, particularly food, freshwater, timber, fibre, and fuel. These modifications have contributed substantially to human well-being and economic development. The benefits have not been equally distributed. Some people have actually been harmed by these changes. Moreover, short-term increases in some ecosystems' goods and services have come at the cost of long-term degradation of others. For example, efforts to increase the production of food and fibre have decreased the ability of some ecosystems to provide clean water, regulate flooding and support biodiversity.

11. Expanding human population has an adverse effect on

- (i) spiritual fulfilment
- (ii) availability of potable freshwater
- (iii) employment
- (iv) biodiversity

Which of the statements given above are correct?

- (A) (i), (ii), (iii) only
- (B) (ii), (iii), (iv) only
- (C) (ii) and (iv) only
- (D) All of the above

Answer: (C)

Explanation

- The passage states that human population growth has significantly modified ecosystems to meet increased needs for food, water, and other resources.
- This has decreased the availability of clean water due to overuse and pollution.
- It has also harmed biodiversity by altering natural habitats.

- The passage does not mention employment directly. In fact, ecosystem modifications may create job opportunities in some sectors (e.g., agriculture and timber industries).
- While the passage mentions spiritual fulfilment, it does not clearly state that population growth has negatively impacted it.

12. The passage mentions that 'some people have actually been harmed by these changes'. It indicates towards

- (A) inequitable distribution of benefits
- (B) decrease in the ability of some ecosystems to provide clean water, regulate flooding and support biodiversity
- (C) Both (A) and (B)
- (D) Neither (A) nor (B)

Answer: (C)

Explanation

- The passage explains that while many people have benefited from ecosystem modifications, not everyone has gained equally. Some groups suffer because of the inequitable distribution of resources (A).
- It also states that efforts to increase food and fibre production have resulted in the degradation of clean water sources, flood regulation, and biodiversity (B).
- Since both inequitable distribution of benefits and environmental degradation are mentioned as causes of harm, the correct answer is (C).

13. Which of the following is correct in the context of the passage?

- (A) The rapid expansion of population has adversely affected some people
- (B) Sufficient efforts have not been made to increase the production of food and fibre
- (C) In short term, some people may be harmed, but in long term, everyone will benefit from modification in earth's ecosystem
- (D) None of the above

Answer: (A)

Explanation

- The passage clearly states that some people have suffered due to ecosystem modifications, which have led to issues like reduced water quality, biodiversity loss, and inequitable resource distribution.
- (B) is incorrect because the passage mentions that food and fibre production has increased, but it has come at an environmental cost.
- (C) is incorrect because the passage does not say that everyone will eventually benefit in the long term; rather, it warns of long-term ecosystem degradation.

14. With reference to the passage, consider the following statements :

- (i) It is imperative to modify the earth's ecosystem for the well-being of mankind.
- (ii) Technology can never replace all the goods and services provided by ecosystems.

Which of the statements given above is/are correct?

- (A) Only (i)
- (B) Only (ii)
- (C) Both (i) and (ii)
- (D) Neither (i) nor (ii)

Answer: (C)

Explanation:

- Statement (i) is correct because the passage states that humans have modified the ecosystem to increase food, water, and other resources to meet growing demands, implying that modification is necessary.
- Statement (ii) is correct because the passage gives the example of desalination of seawater, stating that technology can replace some natural processes, but it is extremely costly and not always feasible.

15. According to the passage, which of the following can be taken as the main reason for the modification of earth's system?

- (A) Technology
- (B) Increasing population
- (C) Lack of an integrated approach
- (D) All of the above

Answer: (B)

Explanation

- The passage explicitly states that the rapidly expanding human population has been the primary driver of ecosystem modifications.
- It does not say that technology has driven these changes – rather, technology has been used as a response to these modifications (e.g., desalination).
- Lack of an integrated approach is not directly mentioned as the main reason for modifications, though it could contribute to mismanagement.
- All of the above is incorrect because technology itself is not the main reason – it is a tool used to manage or cope with population-driven changes.

16. Which of the following can be considered as the most suitable title for the passage?

- (A) Modification of our ecosystem
- (B) Our natural resources
- (C) Harmful effect of increase in human population
- (D) Human interference in our ecosystem

Answer: (A)

Explanation

- The passage discusses how ecosystems have been modified due to human activity, focusing on population growth, resource extraction, and environmental consequences.
- Our natural resources is too broad and does not emphasize the modification aspect.
- Harmful effect of increase in human population is misleading because the passage acknowledges both benefits and harms of ecosystem modification.
- Human interference in our ecosystem is close, but "modification" better captures the theme of the passage, which discusses both positive and negative changes.

17. If all Ps are Qs and some Qs are Rs, which of the following must be true?

- (A) All Ps are Rs
- (B) Some Ps are Rs
- (C) No Ps are Rs
- (D) None of the above

Answer: (D)

Explanation

- Given that all Ps are Qs, this means P is completely inside Q in a Venn diagram.
- Given that some Qs are Rs, this means there is an overlap between Q and R.
- However, it is not necessary that P and R overlap.
- All Ps are Rs (A) is incorrect because we do not know if P is inside R.
- Some Ps are Rs (B) is incorrect because P may or may not overlap with R.
- No Ps are Rs (C) is incorrect because there is no confirmation that P and R do not overlap.

18. How many pairs of letters are there in the word "CASTRAPHONE" which have as many letters between them in the word as in the alphabet?

- (A) 3
- (B) 4
- (C) 5
- (D) 6

Answer: (C)

Explanation

We need to find pairs of letters in the word CASTRAPHONE where the number of letters between them matches their distance in the alphabet.

Checking the word systematically:

- C - A (No match)
- C - S (Match)
- A - R (Match)
- S - P (Match)
- T - O (Match)
- H - O (Match)

Total pairs = 5.

19. In which year was Facebook launched?

- (A) 1972
- (B) 1980
- (C) 1999
- (D) 2004

Answer: (D)

Explanation

Facebook was founded by Mark Zuckerberg and launched on February 4, 2004 at Harvard University.

20. What is the meaning of the word 'Jargon'?

- (A) A specialized language of a particular group of people
- (B) Techniques of good writing
- (C) A special article written by an editor
- (D) None of the above

Answer: (A)

Explanation

- Jargon refers to specialized terminology used by a specific profession, trade, or group.

- Example: Medical jargon, legal jargon, technical jargon.

21. An Informal Gathering occurs when a group of people get together in a casual, relaxed manner. Which situation given below is the best example of an Informal Gathering?

- (A) Debating club meets on the first Sunday morning of every month
- (B) After finding out about his salary raise, Jaya and a few colleagues go out for a quick dinner after work
- (C) Meena sends out 10 invitations for a bachelorette party she is giving for her elder sister
- (D) Whenever she eats at a Chinese restaurant, Roop seems to run into Dibya

Answer: (B)

Explanation

- Informal gatherings happen spontaneously without formal planning.
- Option (B) is a casual and spontaneous celebration.

Direction (Q. Nos. 22-26) : Study the following information to answer the given questions :

- (a) Eight persons E, F, G, H, I, J, K and L are seated around a square table-two on each side.
- (b) There are three lady members and they are not seated next to each other.
- (c) J is between L and F.
- (d) G is between I and F.
- (e) H, a lady member, is second to the left of J.
- (f) F, a male member, is seated opposite to E, a lady member.
- (g) There is a lady member between F and I.

22. Who among the following are the three lady members?

- (A) E, H and J
- (B) E, G and J
- (C) G, H and J
- (D) H, E and G

Answer: (D)

Explanation

- Given that H is a lady and is second to the left of J.
- F is a male, seated opposite to E, meaning E is a female.
- There is one more female between F and I, and that must be G. Thus, the three female members are H, E, and G.

23. Which of the following is true about J?

- (A) J is a male member
- (B) J is a female member
- (C) Gender of J cannot be determined
- (D) Position of J cannot be determined

Answer: (C)

Explanation

- The passage does not provide any information about J's gender.
- Since we know the three female members (E, H, and G), the gender of J remains uncertain.

24. Who among the following is seated between E and H?

- (A) I
- (B) J
- (C) F
- (D) K

Answer: (D)

Explanation

From the arrangement, K is seated between E and H.

25. Who among the following is to the immediate left of F?

- (A) G
- (B) J
- (C) I
- (D) K

Answer: (B)

Explanation

From the arrangement, J is seated to the immediate left of F.

26. How many people are seated between K and F?

- (A) One
- (B) Two
- (C) Three
- (D) Cannot be determined

Answer: (B)

Explanation

Based on the given arrangement, two people are seated between K and F.

27. Which of the following clearly defines the function of mass media?

- (A) Providing information
- (B) Work as a responsible resource
- (C) Providing a political forum
- (D) All of the above

Answer: (D)

Explanation

Mass media serves multiple functions, including:

- Informing the public (news, awareness).
- Acting as a responsible resource (education, guidance).
- Providing a political forum (debates, discussions).

Thus, all options are correct.

28. T, S and R are three brothers. T's son Q is married to K and they have one child Rahul blessed to them. M the son of S, is married to H and this couple is blessed with a daughter Madhvi. R has a daughter N who is married to P. This couple has one daughter Karuna born to them. How is Madhvi related to S?

- (A) Daughter
- (B) Niece
- (C) Granddaughter
- (D) None of the above

Answer: (C)
Explanation

- Madhvi is the daughter of M, who is S's son.
- Therefore, Madhvi is the granddaughter of S.

29. A postman was returning to the post office which was in front of him to the North. When the post office was 100 m away from him, he turned to the left and walked 50 m to deliver he left and the last letter at CGO complex and moved another 50 m to meet his friend. Then he turned towards North and walked 100 m. How far is he from the post office?

- (A) 150 m
- (B) 100 m
- (C) 50 m
- (D) 75 m

Answer: (C)
Explanation

1. The postman was 100 m away from the post office.
2. He moved 50 m left, then another 50 m left.
3. Now he moves 100 m north, bringing him back in line with the post office.
4. Using the Pythagoras theorem, the distance is:

$$(100)^2 + (50)^2 = 10000 + 2500 = 12500 \approx 50m$$

30. Three individuals have to be selected from a group of 6 people. How many different combinations are possible?

- (A) 120
- (B) 60
- (C) 20
- (D) 10

Answer: (C)
Explanation

The number of ways to select r individuals from a group of n individuals is given by the combination formula:

$${}^nC_r = \frac{n!}{r!(n-r)!}$$

Substituting n = 6 and r = 3:

$${}^6C_3 = \frac{6!}{3!(6-3)!} = \frac{6!}{3!3!} = \frac{6 \times 5 \times 4}{3 \times 2 \times 1} = 20$$

31. John needs to choose between two job offers. Officer A has a higher salary but is located in a city with higher cost of living. Offer B has a lower salary but is situated in a town with a lower cost of living. Which job offer should John choose?

- (A) Offer A

- (B) Offer B
- (C) None
- (D) Cannot be determined

Answer: (D)

Explanation

John's decision depends on several factors, including:

- Net disposable income (Salary - Cost of Living)
- Additional benefits such as work-life balance, career growth, and lifestyle preferences

Since we do not have actual salary and cost of living values for both offers, we cannot determine which option is better.

32. Arrange these words in alphabetical order and choose the one that comes last :

- (i) Abandon
 - (ii) Actuate
 - (iii) Accumulate
 - (iv) Acquit
 - (v) Achieve
- (A) Actuate
(B) Accumulate
(C) Acquit
(D) Achieve

Answer: (A)

Explanation

Alphabetical Order:

1. Abandon
2. Accumulate
3. Achieve
4. Acquit
5. Actuate

The last word in this sequence is Actuate.

33. Three of the following four words are alike in a certain way and one is different. Pick the odd one out.

- (A) Hendecagon
- (B) Hexagon
- (C) Heptagon
- (D) Pentagon

Answer: (D)

Explanation

The polygons Hexagon (6 sides), Heptagon (7 sides), and Pentagon (5 sides) all have a smaller number of sides and are commonly studied in geometry. Hendecagon (11 sides) is much larger and less commonly discussed in basic geometric studies, making it the odd one out.

34. Manish is going on a vacation and needs to book a hotel. He shortlists 3 hotels and is now

comparing them on the basis of cost, facilities available and proximity to tourist sites. Which step of decision making is Manish performing?

- (A) Generating the alternatives
- (B) Defining the selection criteria
- (C) Evaluating the alternatives
- (D) Reviewing the decision

Answer: (C)

Explanation

The decision-making process involves the following steps:

1. Generating alternatives – Identifying different hotel options
2. Defining selection criteria – Deciding factors like cost, facilities, and location
3. Evaluating alternatives – Comparing shortlisted hotels based on criteria (this is what Manish is doing)
4. Making the decision – Selecting the best option
5. Reviewing the decision – Assessing satisfaction after the trip

Since Manish is comparing hotels based on predefined factors, he is at the "Evaluating the alternatives" step.

35. In the year 1780, who had started the first printed newspaper named as Bengal Gazette, in India?

- (A) Annie Besant
- (B) James Augustus Hicky
- (C) Richard Stafford Cripps
- (D) AO Hume

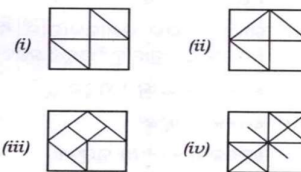
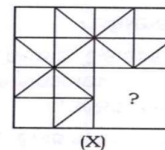
Answer: (B)

Explanation

- Annie Besant – Founded *The Commonwealth* and *New India* but was active in the late 19th and early 20th century, not 1780.
- James Augustus Hicky – Started *Hicky's Bengal Gazette* in 1780, making it India's first printed newspaper.
- Richard Stafford Cripps – A British politician, not associated with newspapers.
- A.O. Hume – Founder of the Indian National Congress, not linked to newspaper publishing.

36. Identify the figure that completes the pattern :

- (A) (i)
- (B) (ii)
- (C) (iii)
- (D) (iv)



Answer: (B)

37. Which behavior is important for effective listening in a communication exchange?

- (A) Interrupting frequently to clarify points
- (B) Maintaining consistent eye contact
- (C) Taking detailed notes during the conversation
- (D) Nodding frequently to show agreement

Answer: (B)

Explanation

Effective listening involves active engagement without distractions or interruptions. Let's analyze the options:

- (A) Interrupting frequently to clarify points → Interrupting disrupts the speaker's flow and can hinder effective communication. Incorrect.
- (B) Maintaining consistent eye contact → Eye contact shows attentiveness and interest in the conversation, which is a key component of active listening. Correct.
- (C) Taking detailed notes during the conversation → While note-taking is useful, excessive focus on writing may cause the listener to miss important verbal and non-verbal cues. Incorrect.
- (D) Nodding frequently to show agreement → Nodding may show engagement, but it does not necessarily mean the listener is actively processing the message. Incorrect.

38. Statement : The vehicular traffic has increased so much in the recent past that it takes at least two hours to travel between the city and the airport during peak hours.

Course of action :

- I. Non-airport bound vehicles should not be allowed to ply on the road connecting the city and the airport.
 - II. The load of vehicular traffic should be diverted through various link roads during peak hours .
 - III. The departure and arrival of flights should be regulated so as to avoid congestion during peak hours.
- (A) None follows
(B) Only I follows
(C) Only II and III follow
(D) Only I and III follow

Answer: (C)

Explanation

- I. Non-airport bound vehicles should not be allowed to ply on the road connecting the city and the airport. Too extreme and impractical. Not all non-airport vehicles can be banned from using a major road.
- II. The load of vehicular traffic should be diverted through various link roads during peak hours. A practical solution that can help reduce congestion.
- III. The departure and arrival of flights should be regulated to avoid congestion during peak hours. Although it might help, it is not a direct solution to road traffic congestion but could contribute to easing peak-hour rush.

39. Direction: In each question below is given a statement followed by two assumptions numbered I and II. Consider the statement and decide which of the given assumptions is implicit.

Statement: A statement in the call letter given to candidates of the written examination states – "you have to bear the travel expenses for attending the written examination"

Assumption I : If not clarified all the candidates may claim reimbursement.

Assumption II : Many organizations reimburse the expenses on travel to the candidates appearing for written examination .

- (A) Only Assumption I is implicit
(B) Only Assumption II is implicit
(C) Either Assumption I or Assumption II is implicit
(D) Both Assumption and Assumption II are implicit

Answer: (D)

Explanation

Assumption I: If not clarified, all the candidates may claim reimbursement. The statement explicitly clarifies that expenses will not be reimbursed, suggesting that if this were not mentioned, candidates might have expected reimbursement. Implicit.

Assumption II: Many organizations reimburse the expenses on travel to the candidates appearing for the written examination. The need to clarify this in the call letter suggests that it is a common practice among some organizations. Implicit.

40. What does the SOLER model in communication stand for?

- (A) Sincere, Open, Listening, Eye contact, Relaxed
- (B) Sit squarely, Open posture, Lean towards the speaker, Eye contact, Relax
- (C) Specific, Open, Listening, Engaged, Responsive
- (D) Synchronized, Open, Listening, Eye contact, Reassured

Answer: (B)

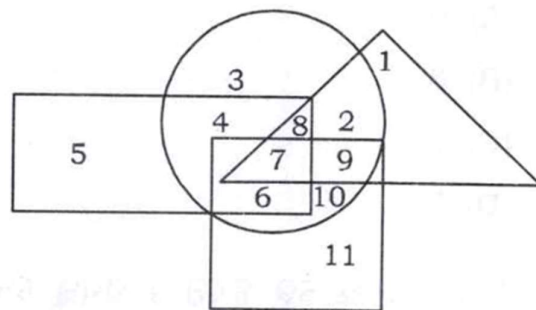
Explanation

The SOLER model is a framework used in active listening and non-verbal communication, particularly in counseling and effective interpersonal communication. It stands for:

- **S** → Sit squarely
- **O** → Open posture
- **L** → Lean towards the speaker
- **E** → Eye contact
- **R** → Relax

This model emphasizes body language and positioning to foster engagement and attentiveness in communication.

Direction (Q. Nos. 41-45) : In the following figure, rectangle, square, circle and triangle represent the regions of wheat, gram, maize and rice cultivation respectively. Based on the figure, answer the following questions :



41. Which area is cultivated by all four commodities?

- (A) 8
- (B) 7
- (C) 9
- (D) 2

Answer: (B)

Explanation

7 is common to all the commodities.

42. Which area is cultivated by wheat and maize only?

- (A) 8

- (B) 6
- (C) 5
- (D) 4

Answer: (B)

Explanation

6 is common to only wheat and maize.

43. Which area is cultivated by rice only?

- (A) 5
- (B) 1
- (C) 2
- (D) 11

Answer: (B)

Explanation

1 is exclusive to rice only

44. Which area is cultivated by maize only?

- (A) 10
- (B) 2
- (C) 3
- (D) 4

Answer: (C)

Explanation

3 is exclusive to maize only.

45. Which area is cultivated by rice and maize and nothing else?

- (A) 9
- (B) 8
- (C) 2
- (D) 7

Answer: (C)

Explanation

2 is common to rice and maize only.

46. Which of the following is not a database object in MS Access?

- (A) Reports
- (B) Tables
- (C) Relationships
- (D) Queries

Answer: (C)

Explanation

MS Access consists of various database objects that help store, retrieve, and manage data.

- (A) Reports → Used to format and present data. (Database Object)
- (B) Tables → Store structured data. (Database Object)
- (C) Relationships → Define associations between tables but are not standalone objects. (Not a Database Object)

- (D) Queries → Retrieve and manipulate data. (Database Object)

47. Which one of the following represents the binary equivalent of the decimal number 23?

- (A) 01011
- (B) 10111
- (C) 10011
- (D) None of the above

Answer: (B)

Explanation

To convert 23 (decimal) to binary:

1. Divide 23 by 2 → Quotient: 11, Remainder: 1
2. Divide 11 by 2 → Quotient: 5, Remainder: 1
3. Divide 5 by 2 → Quotient: 2, Remainder: 1
4. Divide 2 by 2 → Quotient: 1, Remainder: 0
5. Divide 1 by 2 → Quotient: 0, Remainder: 1

Reading the remainders from bottom to top, 23 (decimal) = 10111 (binary).

48. In which year was Educational TV first introduced in India?

- (A) 1961
- (B) 1959
- (C) 1971
- (D) 1968

Answer: (C)

Explanation

Educational TV was introduced in India as an experimental service.

- 1959 → Television was first introduced in India.
- 1961 → Educational TV was introduced by Doordarshan in collaboration with UNESCO.

49. Which is the largest storage unit among the following?

- (A) Terabyte
- (B) Megabyte
- (C) Kilobyte
- (D) Gigabyte

Answer: (A)

Explanation

The units of digital storage are as follows (from smallest to largest):

1. **Kilobyte (KB)** = 1,024 bytes
2. **Megabyte (MB)** = 1,024 KB
3. **Gigabyte (GB)** = 1,024 MB
4. **Terabyte (TB)** = 1,024 GB

50. An area is affected by severe flooding. You, as a District Magistrate, have limited resources. Which of the following should be your immediate priority?

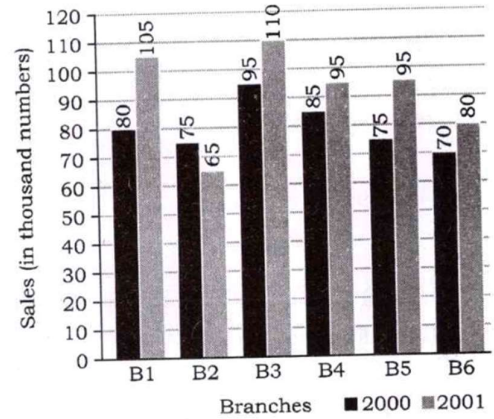
- (A) Repairing roads
- (B) Distributing food and water
- (C) Rebuilding houses
- (D) Organizing entertainment to lift people's spirits

Answer: (B)

Explanation

In a disaster situation, immediate survival needs take priority. Let's analyze the options:

- (A) Repairing roads → Important, but not an immediate necessity.
- (B) Distributing food and water → Essential for survival as people may be stranded without supplies.
- (C) Rebuilding houses → Necessary for long-term recovery but not the first priority.
- (D) Organizing entertainment to lift people's spirits → Not a priority in an emergency.



Direction (Q. Nos. 51-55) : The bar graph given below shows the sales of books (in thousand numbers) from six branches B1 to B6 of a publishing company during two consecutive, years 2000 and 2001.

51. What is the ratio of the total sales of branch B2 for both years to the total sales of branch B4 for both years?

- (A) 2 : 3
- (B) 3 : 5
- (C) 4 : 5
- (D) 7 : 9

Answer: (D)

Explanation

$$B2 = 75 + 65 = 140$$

$$B4 = 85 + 95 = 180$$

$$B2/B4 = 140/180 = 7/9$$

52. Total sales of branch B6 for both the years are what percent of the total sales of branch B3 for both the years?

- (A) 68.54%
- (B) 71.11%
- (C) 73.17%
- (D) 75.55%

Answer: (C)

Explanation

$$B6/B3 = 150/205 = 0.7317$$

53. What percent of the average sales of branches B1, B2 and B3 in 2001 is the average sales of branches B1, B3 and B6 in 2000?

- (A) 75%
- (B) 77.5%
- (C) 82.5%
- (D) 87.5%

Answer: (D)

Explanation

$(B1+B3+B6)/3 = 245/3 = 81.66$ for 2000; $(B1+B2+B3)/3 = 280/3 = 93.33$ for 2001
Ratio of the two is 0.875

54. What is the average sales of all the branches (in thousand numbers) for the year 2000?

- (A) 73
- (B) 80
- (C) 83
- (D) 88

Answer: (B)

Explanation

For year 2000, $(B1+B2+B3+B4+B5+B6)/6 = (80+75+95+85+75+70)/6 = 80$

55. Total sales of branches B1, B3 and B5 together for both the years (in thousand numbers) are ?

- (A) 250
- (B) 310
- (C) 435
- (D) 560

Answer: (D)

Explanation

$B1 = 80+105 = 185$, $B3 = 95+110 = 205$, $B5 = 75+95 = 170$

56. The sum of the digits of a two-digit number is 9. If the number formed by reversing the digits is 9 less than the original number, what is the original number?

- (A) 27
- (B) 45
- (C) 63
- (D) None of the above

Answer: (D)

Explanation

Let the original number be $10x + y$, where x is the tens digit and y is the units digit.

1. Given: $x + y = 9$
2. The reversed number is $10y + x$
3. Given: $(10x + y) - (10y + x) = 9$

$$10x+y-10y-x=9 \Rightarrow 10x+y-10y-x=9 \Rightarrow 9x-9y=9 \Rightarrow 9x-9y=9 \Rightarrow x-y=1$$

4. Solving the equations:
 - $x + y = 9$
 - $x - y = 1$

Adding both equations:

$$2x=10 \Rightarrow x=5 \Rightarrow 2x=10 \Rightarrow x=5$$

Substituting in $x + y = 9$:

$$5+y=9 \Rightarrow y=4 \quad 5+y=9 \Rightarrow y=4$$

Thus, the original number is $(10 \times 5 + 4) = 54$.

57. A man spends 30% of his salary on rent and 20% on food. If he has \$ 2,500 left after these expenses, what is his total salary?

- (A) \$ 4,500
- (B) \$ 5,000
- (C) \$ 3,500
- (D) \$ 3,000

Answer: (D)

Explanation

Let his total salary be x . The given expenses are:

- Rent: 30% of $x \rightarrow 0.3x$
- Food: 20% of $x \rightarrow 0.2x$
- Amount left: \$2,500

Total expenses:

$$0.3x + 0.2x = 0.5x$$

Remaining amount equation:

$$x - 0.5x = 2,500 \quad x - 0.5x = 2,500 \quad 0.5x = 2,500 \quad 5x = 2,500 \times 5 \quad 5x = 2,500 \times 5 \quad x = 5,000$$

58. In a sequence of numbers, each number is the sum of the previous two numbers. If the first two numbers are 2 and 3, what is the 6th number in the sequence?

- (A) 21
- (B) 18
- (C) 13
- (D) 12

Answer: (A)

Explanation

The sequence follows the Fibonacci pattern:

1. 2
2. 3
3. $2+3=5$
4. $3+5=8$
5. $5+8=13$
6. $8+13=21$

59. A water tank has two inlet pipes and one outlet pipe. The inlet pipes can fill the tank in 4 hours and 6 hours, respectively. The outlet pipe can empty the tank in 8 hours. If all three pipes are opened simultaneously, how long will it take to fill the tank?

- (A) 3 hours
- (B) 4 hours
- (C) 5 hours
- (D) 6 hours

Answer: (A)

Explanation

- First inlet pipe fills $1/4$ of the tank per hour.
- Second inlet pipe fills $1/6$ of the tank per hour.
- Outlet pipe empties $1/8$ of the tank per hour.

Net filling rate:

$$1/4 + 1/6 - 1/8$$

Finding LCM of 4, 6, 8 \rightarrow 24

$$6/24 + 4/24 - 3/24 = 7/24$$

Time required to fill the tank:

$$24/7 \approx 3.43 \text{ hours}$$

60. A sum of Rs. 10,000 is divided into two parts such that one part is invested at 8% per annum and the other at 6% per annum. If the annual Interest earned from both investments is Rs. 700, what is the amount invested at 8%?

- (A) 4,000
(B) 3,000
(C) 5,000
(D) 6,000

Answer: (D)

Explanation

Let the amount invested at 8% be x and the amount at 6% be $(10,000 - x)$.

Total interest equation:

$$0.08x + 0.06(10,000 - x) = 700$$

Expanding:

$$0.08x + 600 - 0.06x = 700 \quad 0.02x = 100 \quad x = 5,000$$

61. $250\% / 5\% = ?$

- (A) 50%
(B) 500%
(C) 5000%
(D) 5

Answer: (A)

Explanation

$$250/100 \div 5/100 = 250/100 \times 100/5 = 250 \times 100/100 \times 5 = 250/5 = 50$$

62. The sum of squares of two numbers is 146. If the square of their difference is 36, then the product of both the numbers is

- (A) 72
(B) 160
(C) 55
(D) 16

Answer: (A)

Explanation

Using the identity:

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

Substituting given values:

$$146=36+2ab \Rightarrow 2ab=110 \Rightarrow ab=72$$

63. A peon purchased a chair for Rs. 700, spent Rs. 170 on its repair and Rs. 30 on the cartage. If he sold the chair the chao for Rs. 1,080, his gain percent is

- (A) 10
- (B) 20
- (C) 30
- (D) 54.29

Answer: (B)

Explanation

$$\text{Total cost} = ₹700 + ₹170 + ₹30 = ₹900$$

$$\text{Profit} = ₹1,080 - ₹900 = ₹180$$

$$\text{Gain \%} = (\text{Profit} / \text{Cost Price}) \times 100 = (180 / 900) \times 100 = 20\%$$

64. Find the next number in the sequence

17, 17, 51, 255, 1785

- (A) 16065
- (B) 19635
- (C) 15965
- (D) 14955

Answer: (B)

Explanation

The pattern follows:

$$17 \times 1 = 17, 17 \times 3 = 51, 51 \times 5 = 255, 255 \times 7 = 1785$$

Next term:

$$1785 \times 11 = 19635$$

65. A can do $\frac{3}{4}$ of a work in 12 days. He can complete $\frac{1}{8}$ th of the work in

- (A) 3 days
- (B) 4 days
- (C) 72 days
- (D) 2 days

Answer: (B)

Explanation

A completes $\frac{3}{4}$ of work in 12 days, so full work takes:

$$12 / (\frac{3}{4}) = 16 \text{ days}$$

$$\text{Time for } \frac{1}{8} \text{th work} = 16 \times \frac{1}{8} = 4 \text{ days}$$

66. Sonia can copy 50 pages in 10 hours. Priya and Sonia can copy 30 pages in 40 hours. Priya can copy 30 pages in

- (A) 10 hours

- (B) 11 hours
- (C) 12 hours
- (D) 13 hours

Answer: (C)

Explanation

Sonia's rate = $50/10 = 5$ pages/hour

Let Priya's rate be x pages/hour.

Together:

$$5+x=30/40=0.75$$

Solving for x :

$$x=0.75-0.5=0.25$$

Time for 30 pages = $30 / 2.5 = 12$ hours.

67. The probability of getting a bad egg in a lot of 400 eggs is 0.035. The number of bad eggs in the lot is

- (A) 7
- (B) 14
- (C) 21
- (D) 28

Answer: (B)

Explanation

$$0.035 \times 400 = 14$$

68. Arrange in order, from least to greatest :

-8/5, -3/2, -19/11

- (A) $-8/5 < -3/2 < -19/11$
- (B) $-19/11 < -3/2 < -8/5$
- (C) $-19/11 < -8/5 < -3/2$
- (D) $-3/2 < -19/11 < -8/5$

Answer: (C)

Explanation

Converting to decimals:

$$-8/5 = -1.6, -3/2 = -1.5, -19/11 \approx -1.727$$

Ordering: $-19/11 < -8/5 < -3/2$

69. A chemist has one solution which is 50% acid and a second which is 25% acid. How much of each should be mixed to make 10 litres of a 40% acid solution?

- (A) 4 litres of 50% and 6 litres of 25 %
- (B) 3 litres of 50% and 7 litres of 25 %
- (C) 6 litres of 50% and 4 litres of 25%
- (D) 7 litres of 50% and 3 litres of 25%

Answer: (C)

Explanation

Let x litres be from 50%, and 10 - x from 25%.
 $50x + 25(10 - x) = 40(10)$
 $50x + 250 - 25x = 400$ $25x = 150 \Rightarrow x = 6$

70. If the number K35624 is divisible by 11, then what is the value of K?

- (A) 2
- (B) 5
- (C) 7
- (D) 6

Answer: (D)

Explanation

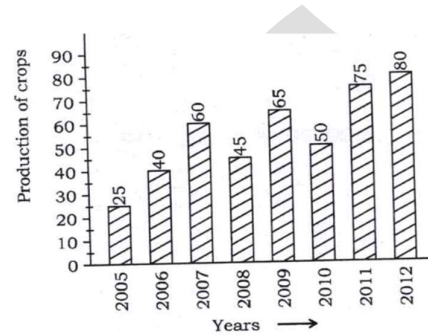
Number is divisible by 11 if:
 (Sum of odd place digits) - (Sum of even place digits) =
 multiple of 11

For K35624,

Odd places: $K + 5 + 2 = K + 7$

Even places: $3 + 6 + 4 = 13$ $(K+7) - 13 = \text{multiple of } 11$ $K - 6 = 0 \Rightarrow K = 6$

Direction (Q. Nos. 71-73) : Study the bar chart and answer the questions based on it.
 Production of crops (in 1000 tonnes) over the years.



71. The average production of the crops in the year 2006 and 2007 was exactly equal to the average production of which of the following pairs of years?

- (A) 2010 and 2011
- (B) 2009 and 2010
- (C) 2008 and 2010
- (D) 2005 and 2011

Answer: (D)

Explanation

Average for 2006 and 2007 is $(40 + 60) / 2 = 50$

For 2005 and 2011, the average will be $(25 + 75) / 2 = 50$

72. What was the percentage increase in the production of crops in 2012 compared to that in 2005?

- (A) 180
- (B) 200
- (C) 220
- (D) 250

Answer: (C)

Explanation

Production of crops in 2005 = 25

Production of crops in 2012 = 80

Absolute Increase is 55, % increase is $(55 / 25) \times 100 = 220\%$

73. What was the percentage decline in the production of crops from the year 2007 to 2008?

- (A) 34%
- (B) 25%

- (C) 21%
- (D) 40%

Answer: (A)

Explanation

Production of crops in 2007= 60

Production of crops in 2008= 40

Absolute Decrease is 20, % decrease is $(20/60) \times 100 = 33.33\%$

Direction (Q. Nos. 74 & 75) : In the light of data sufficiency, choose the appropriate option from the following :

74. The last Sunday of July, 2018 fell on which date?

Statements :

- (i) The first Sunday of that month fell on 5th.
- (ii) The last day of that month was Friday.

- (A) Statement (i) alone is sufficient while Statement (ii) alone is not sufficient
- (B) Statement (ii) alone is sufficient while Statement (i) alone is not sufficient
- (C) Either Statement (i) or Statement (ii) is sufficient
- (D) Neither Statement (i) nor Statement (ii) is sufficient

Answer: (A)

Explanation

If the first Sunday was on 5th July, then Sundays in that month would be:

- 5th
- 12th
- 19th
- 26th

However, July 5, 2018, was actually a Thursday. This means Statement (i) is incorrect and thus irrelevant.

Now, let's check Statement (ii):

- If the last day of the month (31st July) was a Friday, we count backward:
 - 30th (Thursday)
 - 29th (Wednesday)
 - 28th (Tuesday)
 - 27th (Monday)
 - 26th (Sunday)

So, the last Sunday of July 2018 was on the 29th.

Statement (ii) alone is sufficient to determine the last Sunday. Statement (i) is incorrect and therefore irrelevant.

75. Mr. X ranks eighteenth from the top in a class. What is his rank from the last ?

Statements:

- (i) There are 47 students in the class.

(ii) Mr. Y who ranks 10th in the same class, ranks 38th from the last.

- (A) Statement (i) alone is sufficient while Statement (ii) alone is not sufficient
 (B) Statement (ii) alone is sufficient while Statement (i) alone is not sufficient
 (C) Either Statement (i) or Statement (ii) is sufficient
 (D) Neither Statement (i) nor Statement (ii) is sufficient

Answer: (A)

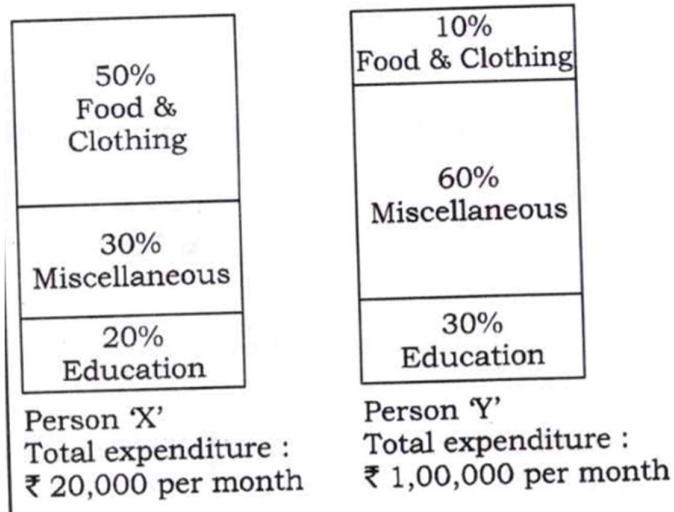
Explanation

Statement (i): If there are 47 students in the class and Mr. X is ranked 18th from the top, then his rank from the bottom is: Total students – Rank from top + 1 = 47 – 18 + 1 = 30

So, Mr. X's rank from the last is 30th. Statement (i) alone is sufficient.

Statement (ii): Mr. Y ranks 10th from the top and 38th from the last. This confirms that the total number of students in the class is: 10 + 38 – 1 = 47. Since we have now determined the total number of students, we can use the same logic as above to determine Mr. X's rank from the last. Statement (ii) also leads to the same conclusion that there are 47 students, so we can again compute Mr. X's rank as 30th. Statement (ii) alone is also sufficient.

76. In the following Bar diagram, the proportion of expenditure spent on the several things by two persons X and Y are shown :



From the above Bar diagram, which of the following statements is correct?

- (A) Person X spent more money on food and clothing than person Y.
 (B) Person X spent less money on food and clothing than person Y.
 (C) Person X and person Y spent the same amount on food and clothing.
 (D) The amount of expenditure on food and clothing by person X and person Y cannot be

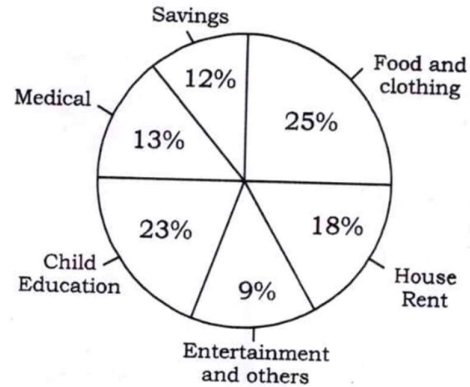
compared.

Answer: (C)

Explanation

For X, 50% of 20,000 = 10,000
For Y, 10% of 1,00,000 = 10,000

Direction (Q. Nos. 77 & 78): Study the following pie chart and answer the questions:



The monthly expenditure (in percent) of a family is represented by the given pie chart. Let the total monthly income of the family be Rs. 33,650, then :

77. The amount of annual savings in Rs. would be

- (A) 48310
- (B) 48456
- (C) 51393
- (D) 50284

Answer: (B)

Explanation

$(12\% \text{ of } 33650) \times 12 = 4038 \times 12 = 48456$

78. After payment of house rent and deductions of monthly savings, the total monthly income of the family in Rs. remains

- (A) 23545
- (B) 23555
- (C) 29471
- (D) 28350

Answer: (B)

Explanation

After payment of house rent and deductions of monthly savings, 70% remains
 $70\% \text{ of } 33650 = 23555$

Direction (Q. Nos. 79 & 80) : Answer the questions based on the following table which shows the results of half yearly and annual examinations of four sections A, B, C, D of Class-V students in a school.

Result	No. of Students			
	Section A	Section B	Section C	Section D
Student failed in both Exams	28	23	17	27
Students failed in half-yearly but passed in Annual Exams	14	12	8	13
Students passed in half-yearly but failed in Annual Exams	6	17	9	15
Students passed in both Exams	64	55	46	76

79. How many students are there in Class-V of the school?

- (A) 386
- (B) 219
- (C) 399
- (D) 430

Answer: (D)

Explanation

Each section's total students = Sum of all categories.

Total Students=Failed in Both+Failed Half-Yearly but Passed Annual+Passed Half-Yearly but Failed Annual+Passed Both

For Section A:

$$28+14+6+64=112$$

For Section B:

$$23+12+17+55=107$$

For Section C:

$$17+8+9+46=80$$

For Section D:

$$27+13+15+76=131$$

Total: 430

80. Which section has the maximum success rate in annual examination?

- (A) Section A
- (B) Section B
- (C) Section C
- (D) Section D

Answer: (A)

Explanation

Pass percentage

$$= (\text{Students Passed in Both Exams} + \text{Students Passed in Annual}) / \text{Total Students} \times 100$$

Pass Percentage

$$= (\text{Passed Both}) + (\text{Failed Half Yearly but Passed Annual}) / \text{Total Students} \times 100$$

For Section A:

$$(64+14)/112 \times 100 = 78/112 \times 100 = 69.64\%$$

For Section B:

$$(55+12)/107 \times 100 = 67/107 \times 100 = 62.62\%$$

For Section C:

$$(46+8)/80 \times 100 = 54/80 \times 100 = 67.5\%$$

For Section D:

$$(76+13)/131 \times 100 = 89/131 \times 100 = 67.94\%$$