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General Awareness

1) How many countries are members of the WTO in 2020?

a) 164

b) 155

c) 189

d) 171

Answer: a)

The World Trade Organization (WTO) is an intergovernmental organization that is concerned with the regulation of international trade between nations. It was commenced on 1 January 1995. It has 164 members and 24 observer governments.

2) Which among the following is the smallest satellite launched by ISRO?

a) Cartosat-3

b) SARAL

c) KalamSAT

d) Microsat

Answer: c)

KalamSat is the lightest and smallest satellite, designed by an 18-year-old boy from Tamil Nadu in India. The satellite was taken by ISRO to its designated orbit by PSLV-C44.

3) In which state is India's first dinosaur museum located?

a) Madhya Pradesh

b) Gujarat

c) Bihar

d) Maharashtra

Answer: b)

Gujarat is home to India's first dinosaur museum and Fossil Park at Raiyoli village, which is located near Balasinor town of Mahisagar district.The museum features around 50 sculptures of dinosaurs, including one life-size Rajasaurus Narmadensis, the fossil of which was found in Gujarat.

4) When did East India Company came to India?

a) 1200s

b) 1600s

c) 1800s

d) 1300s

Answer: b)

The British East India Company came to India as traders in spices, a very important commodity in Europe back then as it was used to preserve meat. Apart from that, they primarily traded in silk, cotton, indigo dye, tea and opium. They landed in the Indian subcontinent on August 24, 1608, at the port of Surat.

5) What was the old name of 'Iran'?

a) Ceylon

b) Constantinople

c) Peking

d) Persia

Answer: d)

Persia was historically the common name for Iran in the Western world. On the Nowruz of 1935, Reza Shah asked foreign delegates to use the Persian term Iran in formal

correspondence. Subsequently, the common adjective for citizens of Iran changed from Persian to Iranian.

6) Graphite, an allotrope of carbon is a_____.

a) metal

b) non-metal

c) ore

d) metalloid

Answer: b)

Graphite is allotrope of carbon and it is non-metal. It is the only non-metal that conduct electricity. It occurs naturally in this form and is the most stable form of carbon under standard conditions.

7) Murdeshwar Temple is located in which state of India?

a) Karnataka

b) Andhra Pradesh

c) Punjab

d) Haryana

Answer: a)

Murdeshwar temple is located in Karnataka. It is built on the Kanduka Hill which is surrounded on three sides by the waters of the Arabian Sea. It is dedicated to Sri Lokankara, and a 20-storied gopura is constructed at the temple.

8) State Bank of India, largest state-owned bank was established in which year?

a) 1955

b) 1961

c) 1948

d) 1965

Answer: a)

State Bank of India (SBI) is an Indian multinational, public sector banking and financial services statutory body headquartered in Mumbai, Maharashtra. On 1 July 1955, the Imperial Bank of India became the State Bank of India.

9) Astrosat, India's first dedicated multi-wavelength space telescope was launched in_____.

a) 2015

b) 2018

c) 2017

d) 2014

Answer: a)

Astrosat is India's first dedicated multi-wavelength space telescope. It was launched on a PSLV-XL on 28 September 2015.

10) _____is an electrical device that converts alternating current into direct current.

a) Transistor

b) Rectifier

c) Galvanometer

d) Transformer

Answer: b)

A rectifier is an electrical device that converts alternating current, which periodically reverses direction, to direct current, which flows in only one direction.This process is known as rectification.

11) Who designed Statue of Unity?

a) Ram V. Sutar

b) Jassa Singh Ahluwalia

c) Ustad Lal Chand

d) Ustad Ahmad Lahauri

Answer: a)

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The Statue of Unity is a colossal statue of Indian statesman and independence activist Vallabhbhai Patel. It was designed by Indian sculptor Ram V. Sutar, and was inaugurated by Indian Prime Minister Narendra Modi on 31 October 2018, the 143rd anniversary of Sardar Patel's birth.

12) Who among the following authored 'Coolie'?

a) Raja Rao

b) R. K. Narayan

c) Saros Cowasjee

d) Mulk Raj Anand

Answer: d)

Coolie is a novel by Mulk Raj Anand first published in 1936. The book is highly critical of British rule in India and India's caste system.

13) The Charminar was built by whom?

a) Muhammad Ali Shah

b) Asaf-ud-daula

c) Maharaja Sawai Jai Singh II

d) Mohammed Quli Qutab Shah

Answer: d)

The Charminar is a massive arch built by Mohammed Quli Qutab Shah, in 1591 to commemorate the end of the plague in the city. The symbol of the city, the Charminar, is an impressive square monument with four minarets.

14) When was the Indian constitution amendment for the first time?

a) 1955

b) 1951

c) 1952

d) 1947

Answer: b)

The formal title of the amendment is the Constitution (First Amendment) Act, 1951. It was moved by the then Prime Minister of India, Jawaharlal Nehru, on 10 May 1951 and enacted by Parliament on 18 June 1951.

15) The motif of 'Rani ki Vav' is present on which note?

a) Rs 50

b) Rs 100

c) Rs 200

d) Rs 500

Answer: b)

The Reserve Bank of India issued a new Rs 100 note in lavender colour having a motif of 'Rani ki vav' on the reverse. It is a stepwell in Gujarat's Patan district and is a major tourist attraction. Rani ki vav was recognised by UNESCO as a World Heritage Site in 2014.

16) How many players are there in 'Kho-Kho'?

a) Ten

b) Nine

c) Twelve

d) Thirteen

Answer: c)

Kho Kho is a popular tag game invented in Maharashtra, India. It is played by teams of 12 nominated players out of fifteen, of which nine enter the field who sit on their knees (chasing team), and 3 extra (defending team) who try to avoid being touched by members of the opposing team. It is one of the two most popular traditional tag games in the Indian subcontinent, the other being Kabaddi.

17) The Third Battle of Panipat took place in which year?

a) 1761

b) 1766

c) 1759

d) 1752

Answer: a)

The Third Battle of Panipat took place on 14 January 1761 at Panipat, north of Delhi, between the Maratha Empire and the invading Afghan army of Ahmad Shah Durrani, supported by three Indian allies—the Rohilla (Najib-ud-daulah), Afghans of the Doab region, and Shuja-ud-Daula (the Nawab of Awadh).

18) The 2022 AFC Women's Asian Cup will be hosted by which country?

a) India

b) China

c) Japan

d) Australia

Answer: a)

The 2022 AFC Women's Asian Cup will be the 20th edition of the AFC Women's Asian Cup, the quadrennial international football tournament in Asia competed by the women's national teams in the Asian Football Confederation (AFC). It will be hoste by India.

19) Who is the 17th and current Speaker of the Lok Sabha?

a) Sumitra Mahajan

b) Manohar Joshi

c) Meira Kumar

d) Om Birla

Answer: d)

Om Birla is an Indian politician who is the 17th and current Speaker of the Lok Sabha. He serves a Member of Parliament for the Kota-Bundi constituency in Rajasthan.

20) 'War and Peace' is a novel authored by whom?

a) Nikolai Gogol

b) Leo Tolstoy

c) Ivan Turgenev

d) Anton Chekhov

Answer: b)

War and Peace is a novel by the Russian author Leo Tolstoy, published in 1869. It is regarded as one of Tolstoy's finest literary achievements and remains an internationally praised classic of world literature.

21) How many Mahajanapadas are there in India?

a) 16

b) 20

c) 13

d) 11

Answer: a)

The Mahajanapadas were sixteen kingdoms or oligarchic republics that existed in Northern ancient India from the sixth to fourth centuries BCE during the second urbanisation period. They are 16 in number according to Vyakhyaprajnapti , a sutra of Jainism.

22) The First Lok Sabha was constituted in which year after India's first general election?

a) 1949

b) 1952

c) 1941

d) 1955

Answer: b)

The First Lok Sabha was constituted on 17 April 1952 after India's first general election. The 1st Lok Sabha lasted its full tenure of five years and was dissolved on 4

April 1957. The First Session of this Lok Sabha commenced on 13 May 1952.

23) How many digits are present on the front face of Debit card?

a) 18

b) 21

c) 16

d) 12

Answer: c)

A debit card is a payment card that deducts money directly from a consumer's checking account to pay for a purchase. On the front face of debit card, a 16 digits code is written. First 6 digits are Bank Identification Number and the rest 10 digits are Unique Account Number of the card holder.

24) Curiosity Rover was send for the exploration of which planet?

a) Mars

b) Venus

c) Jupiter

d) Saturn

Answer: a)

Curiosity is a car-sized Mars rover designed to explore the Gale crater on Mars as part of NASA's Mars Science Laboratory mission. Curiosity was launched from Cape Canaveral on November 26, 2011,and landed on Aeolis Palus inside Gale on Mars on August 6, 2012.

25) Which metal is used as an antiperspirant in Deodorant?

a) Magnesium

b) Calcium

c) Aluminium

d) Cobalt

Answer: c)

Antiperspirants are products whose primary function is to inhibit perspiration. Deodorant protects against odor, while antiperspirant protects against sweat and odor.Aluminum is the active ingredient in antiperspirant that helps reduce sweat.

26) Ashraf Ghani is the President of which country?

a) Iran

b) Bangladesh

c) Afghanistan

d) Uzbekistan

Answer: c)

Ashraf Ghani Ahmadzai is an Afghan politician and economist who is serving as President of Afghanistan. He was first elected on 20 September 2014 and was re-elected in the 28 September 2019 presidential election.

27) The Montagu–Chelmsford Reforms were introduced in which year?

a) 1919

b) 1921

c) 1925

d) 1918

Answer: a)

The Montagu–Chelmsford Reforms were reforms introduced by the colonial government in British India to introduce self-governing institutions gradually in India. The reforms were outlined in the Montagu-Chelmsford Report prepared in 1918 and formed the basis of the Government of India Act 1919.

28) Who has presented the Union Budget for the highest no. of times?

a) P. Chidambaram

b) Dr. Manmohan Singh

c) Morarji Desai

d) Arun Jaitley

Answer: c)

With eight annual and two interim budgets, Morarji Desai is the Finance Minister who has presented the maximum number of budgets so far.

29) Which Article of the Indian Constitution prescribes Hindi in Devanagari script as the official language of the Union?

a) Article 343

b) Article 342

c) Article 346

d) Article 341

Answer: a)

Article 343 of the Indian constitution stated that the official language of the Union should become Hindi in Devanagari script instead of the extant English.

30) Ra'ad-II, nuclear-capable cruise missile was launched by which country?

a) Pakistan

b) Iran

c) Bangladesh

d) Russia

Answer: a)

The Ra'ad-II missile is a Pakistani long-range nuclear-capable cruise missile. It was first publicly unveiled on the Pakistan Day military parade on 23 March 2017. The range of the missile is 550 km.

31) World Water Day is observed every year on_____.

a) 21 April

b) 19 August

c) 22 March

d) 12 June

Answer: c)

World Water Day is an annual UN observance day that highlights the importance of freshwater. The day is used to advocate for the sustainable management of freshwater resources. It is observed on 22 March.

32) Who won the ESPN's Female Sportsperson of the Year award 2020?

a) Rani Rampal

b) Vinesh Phogat

c) PV Sindhu

d) Manu Bhaker

Answer: c)

World champion shuttler P V Sindhu won the ESPN's Female Sportsperson of the Year award for a third consecutive time while young shooter Saurabh Chaudhary bagged the honour in the male category.

33) What is the Scientific name of 'Peacock'?

a) Bos gaurus

b) Antilope cervicapra

c) Acridotheres tristis

d) Pavo cristatus

Answer: d)

The Indian peafowl, also known as the common peafowl is a peafowl species native to the Indian subcontinent. Its scientific name is Pavo cristatus.

34) Kaziranga National Park is located in which Indian state?

a) Karnataka

b) Assam

c) Bihar

d) Haryana

Answer: b)

Kaziranga National Park is a protected area in the northeast Indian state of Assam. It has the world's largest population of Indian one-horned rhinoceroses.

35) Lala Lajpat Rai was the founder of which bank?

a) Allahabad Bank

b) Bank of Maharashtra

c) Punjab National Bank

d) Bank of Baroda

Answer: c)

Punjab National Bank was founded by Punjab Keshari Lala Lajpat Rai on April 12, 1895 and is headquartered in New Delhi, India.

36) Ugadi Festival is celebrated in_____.

a) Andhra Pradesh

b) Telangana

c) Karnataka

d) All of the above

Answer: d)

Ugadi is celebrated a day after the first new moon and after the sun passes the celestial equator on the spring equinox. It is the New Year's Day for the States of Andhra Pradesh, Telangana and Karnataka in India.

37) Jagoi, one of the major Indian classical dance forms is from_____.

a) Manipur

b) Tripura

c) Nagaland

d) Meghalaya

Answer: a)

Manipuri dance, also known as Jagoi,is one of the major Indian classical dance forms. It is particularly known for its Hindu Vaishnavism themes, and exquisite performances of love-inspired dance drama of Radha-Krishna called Raslila.

38) The United Nations is headquartered in_____.

a) New York, USA

b) Brussels, Belgium

c) Rome, Italy

d) Dhaka, Bangladesh

Answer: a)

The United Nations is headquartered in New York City in a complex designed by a board of architects led by Wallace Harrison and built by the architectural firm Harrison & Abramovitz. The complex has served as the official headquarters of the United Nations since its completion in 1951.

39) The Golden Quadrilateral was started in which year?

a) 2011

b) 2009

c) 2012

d) 2005

Answer: a)

The Golden Quadrilateral is a national highway network connecting most of the major industrial, agricultural and

cultural centres of India. It forms a quadrilateral connecting the four major metro cities of India i.e Delhi, Kolkata, Mumbai and Chennai. The project was planned in 1999, launched in 2001, and was completed in 2012.

40) How many rows are present in Microsoft Excel?

a) 1,048,576

b) 1,044,534

c) 1,148,576

d) 1,048,421

Answer: a)

There are 1,048,576 rows and 16,384 columns in Microsoft Excel.

Logical Reasoning

1. Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the number-pair that is different from the rest.

a) 76 - 85

b) 22 - 16

c) 89 - 145

d) 13 - 10

Answer: B

a) $76 - 85 \rightarrow 7^2 + 6^2 = 85$

b) $22 - 16 \rightarrow 2^2 + 2^2 \neq 16$

c) $89 - 145 \rightarrow 8^2 + 9^2 = 145$

d) $13 - 10 \rightarrow 1^2 + 3^2 = 10$

2. Select the option that is related to the third word in the same way as the second word is related to the first word.

Mouse : Mice :: Datum : ?

a) Dates

b) Data

c) Datums

d) Deity

Answer: B

The plural form of Mouse is Mice.

The plural form of Datum is Data.

3. Select the letter cluster that will replace the '?' in the given series.

BCA, FGE, ? NOM, RSQ, VWU

a) JIL

b) JIK

c) JKI

d) IJK

Answer: C

B + 4 = F; F + 4 = **J**; J + 4 = N; N + 4 = R; R + 4 = V

C + 4 = G; G + 4 = **K**; K + 4 = O; O + 4 = S; S + 4 = W

A + 4 = E; E + 4 = **I**; I + 4 = M; M + 4 = Q; Q + 4 = U

4. Select the odd word pair from the given alternatives.

a) Unless

b) While

c) But

d) Again

Answer: A

All options except 'again' are examples of conjunctions.

5. An assertion (A) and a reason (R) are given below.

Assertion (A): The steam engine was invented by James Watt.

Reason (R): There was a problem of taking out water from flooded mines.

Choose the correct option.

a) A is true but R is false.

b) A is false but R is true.

c) A and R both are true and R is the correct explanation of A.

d) A and R both are true and R is not the correct explanation of A.

Answer: C

6. In a certain code language, ART is written as 1324400. How is SUN written in that language?

a) 361441196

b) 361414196

c) 364141196

d) 361441916

Answer: A

A → 1 and $1^2 = 1$

R → 18 and $18^2 = 324$

T → 20 and $20^2 = 400$

Similarly,

S → 19 and 19^2 = **361**

U → 21 and 21^2 = **441**

N → 14 and 14^2 = **196**

7. Complete the series.

55, 58, 64, ? 85

a) 73

b) 71

c) 83

d) 78

Answer: A

55 + (3 × 1) = 58

58 + (3 × 2) = 64

64 + (3 × 3) = **73**

73 + (3 × 4) = 85

8. Four letter-cluster have been given, out of which three are alike in some manner and one is different. Select the odd letter-cluster.

a) ADHK

b) FIMP

c) PSVZ

d) ZCGJ

Answer: C

a) ADHK → A + 3 = D; D + 4 = H; H + 3 = K

b) FIMP → F + 3 = I; I + 4 = M; M + 3 = P

c) PSVZ → P + 3 = S; S + 3 = V; V + 4 = Z

d) ZCGJ → Z + 3 = C; C + 4 = G; G + 3 = J

9. A statement followed by four conclusion is given below. Choose the correct option that logically follows from the statement.

Statement:

All watches sold in that shop are of high standard; some of HJIUT watches are sold in that shop.

Conclusions:

1. All watches of high standard were manufactured by HJIUT.

2. Some of HJIUT watches are of high standard.

3. None of the HJIUT watches are of high standard.

4. Some of the HJIUT watches of high standard are sold in that shop.

The conclusion(s) correctly drawn is/are:

a) 3 and 4

b) 1 and 3

c) 1 and 4

d) 2 and 4

Answer: D

10. A series is given, with one term missing. Choose the correct alternative from the given numbers that will complete the series.

X, T, P, ?, H

a) I

b) D

c) H

d) L

Answer: D

X – 4 = T; T – 4 = P; P – 4 = **L**; L – 4 = H

11. Replace % sign with the mathematical operators '+', '-', '×', '÷' and '=' to get a balanced equation out of (27 % 15 % 2) % 10 % 4. Choose the correct sequence from below.

a) + ÷ = -

b) - + = ÷

c) + - ÷ =

d) + = ÷ -

Answer: C

c) + - ÷ =

(27 % 15 % 2) % 10 % 4

=> (27 + 15 – 2) ÷ 10 = 4

=> (42 – 2) ÷ 10 = 4

=> 40 ÷ 10 = 4

=> 4 = 4

12. An assertion (A) and a reason (R) are given below.

Assertion (A): Telephone wires sag more in summer.

Reason (R): They expand due to summer heat.

Choose the correct option.

a) A is true but R is false.

b) A is false but R is true.

c) A and R both is true and R is the correct explanation of A.

d) A and R both is true and R is not the correct explanation of A.

Answer: C

13. An equation followed by two conclusions is given below.

Statement: L > K ≥ P = O ≤ H ≥ T

Conclusions:

I. H ≥ L

II. L ≥ O

Choose the correct option.

a) Only I is true.

b) Only II is true.

c) Both I and II are true.

d) Neither I nor II is true.

Answer: D

I. H ≥ L → False (As, L > K ≥ P = O ≤ H → Relation between L and H cannot be determined)

II. L ≥ O → False (As, L > K ≥ P = O → L > O)

14. Select the option that is related to the third number in the same way as the second number is related to the first number.

8 : 576 : 13 : ?

a) 1396

b) 2346

c) 2366

d) 2126

Answer: C

[8 × 8 × (8 + 1)] = 576

[13 × 13 × (13 + 1)] = 2366

15. A statement followed by two assumptions is given below.

RRB NTPC Memory Based Model Paper Based on Feb 04

Statement:

The end of a financial year is the ideal time to take a look at the performance of various companies.

Assumptions:

I. All the companies take such review at the end of a financial year.

II. The performance data of various companies is available.

Choose the correct alternative.

a) Only I is implicit.

b) Only II is implicit.

c) Both I and II are implicit.

d) Neither I nor II is implicit.

Answer: C

16. WAR = CYH, JOKER = PKOUH, then SPADE = ?

a) GJVYU

b) GJYVU

c) GYJVU

d) GVYJU

Answer: B

W ↔ D − 1 = C

A ↔ Z − 1 = Y

R ↔ I − 1 = H

J ↔ Q − 1 = P

O ↔ L − 1 = K

K ↔ P − 1 = O

E ↔ V − 1 = U

R ↔ I − 1 = H

17. Select the option in which the words share the same relationship as that shared by the given pair of words.

GJSY : HVMX : TRWD : ?

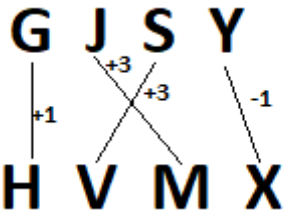
a) UZUC

b) UUZC

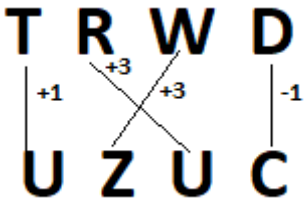
c) ZUUC

d) CZUX

Answer: A



Similarly,



18. Which two numbers should be interchanged in the following equation to make it correct?

12 × 2 + 8 - 48 ÷ 6 = 20

a) 12 and 48

b) 6 and 8

c) 8 and 12

d) 2 and 6

Answer: C

12 × 2 + 8 - 48 ÷ 6 = 20

c) 8 and 12

L.H.S = 8 × 2 + 12 - 48 ÷ 6

= 16 + 12 – 8

= 28 – 8

= 20 = R.H.S

19. Find the missing number in the matrix.

72	14
7	31

45	27
72	48

67	12
89	?

a) 46

b) 54

c) 56

d) 42

Answer: C

(72 + 14 + 7) ÷ 3 = 31

(35 + 27 + 72) ÷ 3 = 48

Similarly,

(67 + 12 + 89) ÷ 3 = 168 ÷ 3 = **56**

20. Select the word which is related to the third word in the same way as the second word is related to the first word.

Election : Manifesto :: Meeting : ?

a) Circular

b) Agenda

c) Preface

d) Report

Answer: B

Manifesto is a written statement by a political party that explains what it hopes to do if it becomes the government in the future.

Similarly,

Agenda is a list of matters that need to be discussed or dealt with in a meeting.

21. In this question, two statements are given followed by two conclusions. Choose the

Conclusion(s) which best fit(s) logically.

Statements:

I. All K are L

II. All L are M

Conclusions:

I. All K is M

II. Some K are not L

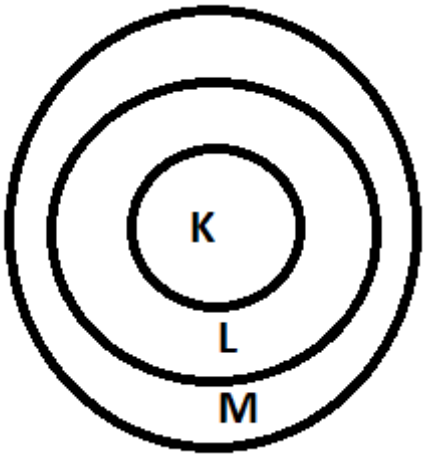
a) Only conclusion II follows

b) Only conclusion I follows

c) Neither conclusion I nor II follows

d) Both conclusions I and II follow

Answer: B



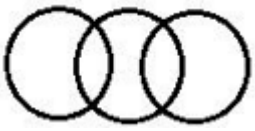
I. All K is M - True

II. Some K are not L - False

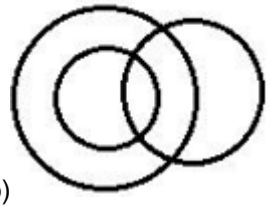
22. Identify the diagram that best represents the relationship among the given classes.

Male, Driver, Female

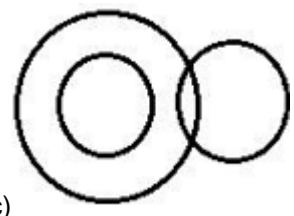
a)



b)



c)



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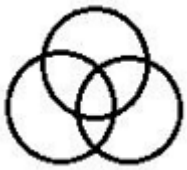


d)

Answer: A

23. Soumya, Deepika, Madhu, Deepika, Nandini and Aarti are sitting around a circular table facing the centre. Nandini is not facing Deepika. Deepa is to the immediate left of Deepika. Aarti is sitting between Soumya and Nandini. Madhu is not adjacent to Nandini.

Who is facing Aarti?

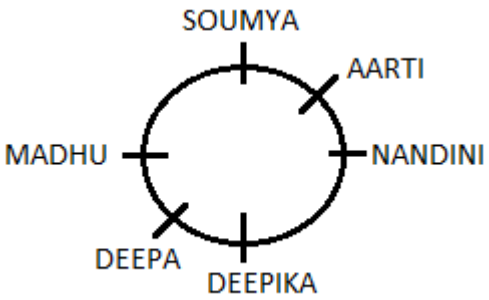
a) Madhu

b) Deepa

c) Deepika

d) Soumya

Answer: B



24. From a supermarket, 15 customers bought orange, 15 bought watermelon, 20 bought blueberry, 2 bought all the three fruits and 8 bought at least two of these. How many bought at least one fruit form the supermarket?

a) 30

b) 35

c) 38

d) 40

Answer: D

Number of people who bought at least two of these fruits = 8

Number of people who bought all the three fruits = 2

So, number of people who bought at least one fruit form the supermarket = (15 + 15 + 20) – (8 + 2) = **40**

25. Interchanging which two signs will make the following equation correct?

15 + 3 × 9 – 4 ÷ 16 = 57

a) – and +

b) – and ÷

c) – and ×

d) + and ÷

Answer: D

15 + 3 × 9 – 4 ÷ 16 = 57

d) + and ÷

15 ÷ 3 × 9 – 4 + 16 = 57

=> 5 × 9 – 4 + 16 = 57

=> 45 – 4 + 16 = 57

=> 61 – 4 = 57

=> 57 = 57

Directions (26 – 28): Read the information given and answer the questions based on it.

Urmila and Qureshi are children of Tarun who is brother-in-law of Priya. Urmila is niece of Sundar. Priya is daughter of Rekha but Rekha is not father of Priya.

26. How is Rekha related to Tarun?

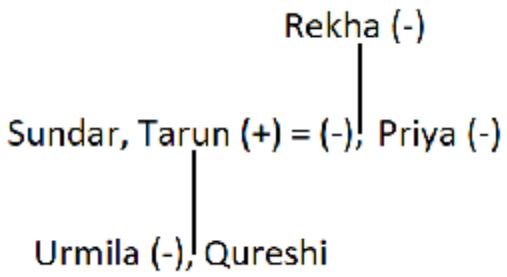
a) Son-in-law

b) Brother-in-law

c) Mother-in-law

d) Sister-in-law

Answer: C



27. How is Sundar related to Qureshi?

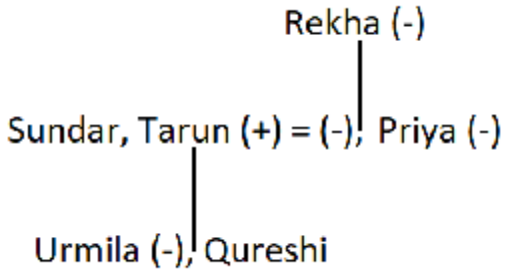
a) Father

b) Brother

c) Uncle

d) Nephew

Answer: C



28. How is Urmila related to Priya?

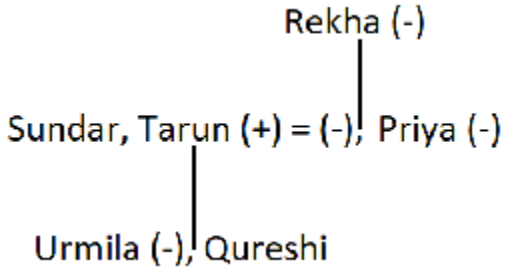
a) Aunt

b) Niece

c) Daughter

d) Mother

Answer: B



29. In this question, two statements are given followed by two conclusions. Choose the Conclusion(s) which best fit(s) logically.

Statements:

1) Some Parrot are birds

2) No bird is mammal

Conclusions:

I. Some birds are parrot

II. Some mammals are parrot

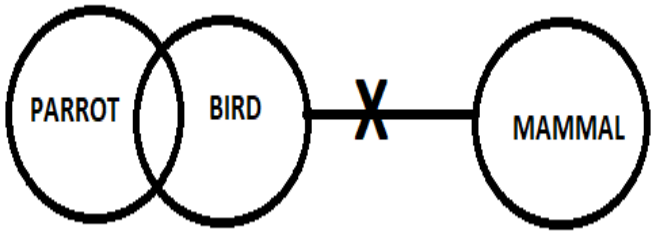
a) Only conclusion II follows

b) Only conclusion I follows

c) Neither conclusion I nor II follows

d) Both conclusions I and II follow

Answer: B



I. Some birds are parrot - True

II. Some mammals are parrot - False

30. Taneja starts from his office walks 22km towards south and walks 10m after taking right and he again take a right and walks 7m and then finally taken a left turn and walks 2km. If he moves 9m towards south, what is the direction of final point with respect to starting point.

a) North-East

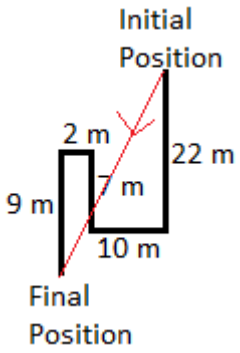
b) South-West

c) North-West

d) South-East

Answer: B

RRB NTPC Memory Based Model Paper Based on Feb 04



Mathematics

1. A and B can complete the work in 30 days, B and C can complete the work in 20 days and C and A can complete the work in 40 days. How many days together take to complete the work?

a) 240/13 days

b) 250/13 days

c) 270/13 days

d) 290/13 days

Answer: A

(A + B)'s one day work = 1/30

(B + C)'s one day work = 1/20

(C + A)'s one day work = 1/40

2(A + B + C)'s one day work = 1/30 + 1/20 + 1/40

= (4 + 6 + 3)/120

= 13/240

A, B and C complete the work in 240/13 days.

2. A train travel with a speed of 7 kmph and another train travel with a speed of 14 kmph. If they cross each other then find the average speed.

a) 17/3 kmph

b) 28/3 kmph

c) 29/3 kmph

d) 19/3 kmph

Answer: B

Average Speed = (2 × 7 × 14)/ (7 + 14)

= 196/21

= 28/3 kmph

3. In an examination, 80% of students pass physics, 70% of students pass chemistry and 15% failed in both. Total 325 students passed the exam. Find the total number of students.

a) 300

b) 400

c) 500

d) 600

Answer: C

Pass percentage = 80% + 70% – (100% - 15%)

= 150% - 85%

= 65%

Total passed students = 325

Let the total number of students appeared be x

x × 65% = 325

x = 32500/65

x = 500

Total 500 students appeared in the examination.

4. $2^{x+y} = 4$ and $64^{x-y} = 2$. Find the value of x and y.

a) 11/12 and 15/12

b) 15/12 and 13/12

c) 11/12 and 12/12

d) 13/12 and 11/12

Answer: D

$2^{x+y} = 4$

$2^{x+y} = 2^2$

x + y = 2 … (i)

$64^{x-y} = 2$

$2^{6(x-y)} = 2^1$

6(x - y) = 1

x – y = 1/6… (ii)

On adding equ (i) and (ii)

2x = 2 + 1/6

2x = 12 + 1/6

2x = 13/6

x = 13/12

y = 13/12 – 1/6

y = 13 – 2/12

y = 11/12

5. A parallelogram of one adjacent angle is twice less than 30°. Find the difference of angle.

a) 60°

b) 50°

c) 40°

d) 30°

Answer: C

Two adjacent angle of parallelogram = 180°

x + 2x – 30° = 180°

3x - 30° = 180

3x = 180° + 30°

3x = 210°

x = 210°/3

x = 70°

2x - 30° = 2 × 70° - 30°

= 140° - 30°

= 110°

Difference of adjacent angle = 110° - 70°

= 40°

6. In a village total men and female are 10000. If 5% men increases and 10% female increases then total men and female are 10800. Find the number of female.

a) 4000

b) 6000

c) 10000

d) 12000

Answer: B

Let the total number of male be x and female be y,

According to the question,

x + y = 10000 …. (i)

105% × x + 110% × y = 10800

105x + 110y = 1080000 …. (ii)

From equ (i), x = 10000 – y

Putting the value of x in equ (ii)

105 × (10000 - y) + 110y = 1080000

1050000 – 105y + 110y = 1080000

5y = 1080000 – 1050000

5y = 30000

y = 6000

7. Ratio of age of Alok and Anil is 3 : 4. After 20 years Alok age is 62 year. Find Anil's present age.

a) 56 year

b) 76 year

c) 36 year

d) 50 year

Answer: A

According to the question,

Alok : Anil = 3 : 4

Alok + 20 : Anil + 20 = 62 : y

Alok + 20 = 62

Alok = 62 – 20

Alok = 42

Alok = 3x = 42

x = 42/3

x = 14

Anil = 4x = 4 × 14 = 56 year

8. Find LCM of √36 and √64.

a) 48

b) 24

c) 12

d) 52

Answer: B

LCM of √36 and √64

= LCM of 6 and 8

= 24

9. A train of 180 m length crosses a bridge of 110 m with a speed of 90 kmph. Find the time.

a) 12.6 sec

b) 10.6 sec

c) 11.6 sec

d) 15.6 sec

Answer: C

Time = Distance/ Speed = (180 + 110)/90 × 5/18

= 290/ (90 × 5/18)

= 290/25

= 11.6 sec

10. 10 men can complete the work in 6 days. After 3 days 5 more men join the work. Find how many days they will take to complete the remaining work.

a) 5 days

b) 3 days

c) 2 days

d) 4 days

Answer: C

According to the question,

10 men × 6 days = 10 men × 3 days + 15 men × x days

60 – 30 = 15 men × x days

30/15 = x days

x = 2 days

11. Cot 3θ × Cot 6θ = 1. Find the value of tan 15θ.

a) - 2/√3

b) 2/√3

c) 1/√3

d) - 1/√3

Answer: D

Cot 3θ . Cot 6θ = 1

Cot 6θ = 1/ cot 3θ

Cot 6θ = tan 3θ

Tan (90° - 6θ) = tan 3θ

(90° - 6θ) = 3θ

90° = 3θ + 6θ

90° = 9θ

θ = 90°/9

θ = 10°

tan 15θ = tan 15 × 10° = tan 150°

= tan (90° + 60°)

= cot 60°

= - 1/√3

12. A shopkeeper offers 20% discount on blue shirt and then again offers 10% discount. Find the net discount.

a) 20%

b) 28%

c) 18%

d) 38%

Answer: B

Net Discount = 20 + 10 – (20 × 10)/100 = 30 – 2 = 28%

13. Convert 2.78 hour in hour, minute and seconds.

a) 2 hour 4 min 40 sec

b) 2 hour 46 min 48 sec

c) 2 hour 5 min 40.8 sec

d) 2 hour 6 min 40.8 sec

Answer: B

2.78 hour = 2 hour + 0.78 hours

0.78 hours = 0.78 × 60 min = 46.80 min

0.8 min = 0.8 × 60 sec = 48 sec

2.78 hour = 2 hour 46 min 48 sec

14. LCM of 72, 54 and x is 864. Find the value of x.

a) 32

b) 27

c) 64

d) 18

Answer: A

Factors of 72 = $2^3 \times 3^2$

Factors of 54 = $2^1 \times 3^3$

Factors of 864 = $2^5 \times 3^3$

so, x = 2^5 = 32

15. LCM of A and B is B, LCM of B and C is C and LCM of C and D is D. Find LCM of A, B, C and D.

a) A

b) B

c) C

d) D

Answer: D

Let A, B, C and D be 2, 4, 8 and 16 respectively then given condition satisfy.

So, LCM of 2, 4, 8, 16 = 16

LCM of A, B, C, D is D.

16. Three bells are ringing at intervals of 0.25 sec, 0.1 sec and 2.5 sec. When will they ring together?

a) 2.5 sec

b) 0.1 sec

c) 0.25 sec

d) 1.8 sec

Answer: A

LCM of 0.25, 0.1, 2.5 = LCM of 25/100, 10/100, 25/10

= 250/100

= 2.5 sec

17. When an article is sold at 10% discount, the selling price is Rs. 36/-. What will be the selling price when the discount is 20%?

a) Rs. 33

b) Rs. 22

c) Rs. 30

d) Rs. 32

Answer: D

Discount = (MP - SP)/MP × 100

10 = (1 – SP/MP) × 100

10/100 = (1 – SP/MP)

1/10 = 1 – SP/MP

1 – 1/10 = SP/MP

9/10 = SP/MP

9/10 = 36/MP

MP = 40

Discount = (MP - SP)/SP × 100

20/100 = (1 – SP/MP)

1/5 = (1 – SP/MP)

1 – 1/5 = SP/MP

4/5 = SP/MP

4/5 = SP/40

SP = 32

18. Ratio of height of cone is 1 : 4. Ratio of diameter is 4 : 5. Find the ratio of their volume.

a) 4 : 25

b) 8 : 25

c) 7 : 25

d) 9 : 25

Answer: A

$V_1 : V_2 = 1/3 \times \pi r_1^2 h_1 : 1/3 \times \pi r_2^2 h_2$

$= r_1^2 h_1 : r_2^2 h_2$

$= d_1^2 h_1 : d_2^2 h_2$

$= 4^2 \times 1 : 5^2 \times 4$

= 16 : 100

= 4 : 25

19. Solve: $\sqrt{(x^2 - 14x + 49)(x^2 + 6x + 9)}$.

a) (x – 7) (x - 3)

b) (x – 7) (x + 3)

c) (x + 7) (x + 3)

d) (x – 7) (x - 3)

Answer: B

$\sqrt{(x^2 – 14x + 49)(x^2 + 6x + 9)}$

$= \sqrt{(x – 7)^2 \times (x + 3)^2}$

$= (x – 7)(x + 3)$

20. Solve: $(1999)^2 – (999)^2$.

a) 100089

b) 600960

c) 4690000

d) 299800

Answer: D

$(1999)^2 – (999)^2$

$= [(1999) – (999)] \times [(1999) + (999)]$

$= 1000 \times 2998$

$= 2998000$

21. a tan α = b. Find cos α.

a) a/b

b) $a + b/\sqrt{a^2 + b^2}$

c) $a/\sqrt{a^2 + b^2}$

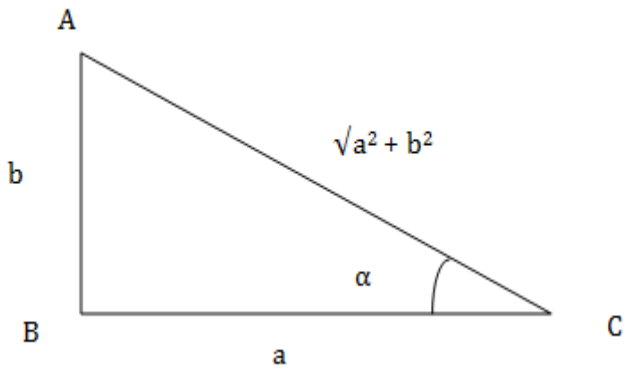
d) $b/\sqrt{a^2 + b^2}$

Answer: D

a tan α = b

tan α = b/a

A



Cos α = $b/\sqrt{a^2 + b^2}$

22. Find area of four walls if length is 15 cm, breadth is 20 cm and height is 30 cm.

a) 2300 cm^2

b) 1000 cm^2

c) 2100 cm^2

d) 1100 cm^2

Answer: C

Area of four walls = 2 × h × (l + b)

= 2 × 30 × (15 + 20)

= 2 × 30 × 35

= 60 × 35

= 2100 cm^2

23. A certain sum at compound interest becomes double in 5 years then in how many years it will be 16 times at the same rate of interest?

a) 10 years

b) 15 years

c) 18 years

d) 20 years

Answer: D

In 5 year sum is double

If sum is 16 times then time is 5 × 4 = 20 years

24. Solve: 0.025 ÷ 0.0025 × 0.25.

a) 0.25

b) 2.5

c) 25

d) 250

Answer: b

0.025 ÷ 0.0025 × 0.25

= 0.025 / 0.0025 × 0.25

= 2.5

25. Find the remainder of $2^{20}/3$.

a) 1

b) 2

c) 3

d) 4

Answer: A

$2^{20}/3 = (-1)^{20} = +1$

26. A reduction of 10% in the price of tea enables a dealer to purchase 25 kg more tea for Rs. 225. Find initial and final price.

a) 2 Rs/kg and 3.5 Rs/kg

b) 1.9 Rs/kg and 3 Rs/kg

c) 1 Rs/kg and 0.9 Rs/kg

d) 0.9 Rs/kg and 2 Rs/kg

Answer: C

Let the original price of tea be x,

After reduction of the price becomes

= x – 10% of x = 9x/10 per kg.

According to the question,

225/ (9x/10) – 225/x = 25

(225 × 10)/9x – 225/x = 25

(225 × 10) – (225 × 9)/9x = 25

225/9x = 25

225 = 25 × 9x

225 = 225x

x = 225/225 = 1 Rs/kg

Initial Price = 1 Rs/kg

Final Price = 9 × 1/10 = 9/10 = 0.9 Rs/kg

27. Solve: (√5 + 1)/ (√5 - 1).

a) (2 + √5)/2

b) (3 + √5)/2

c) (3 - √5)/2

d) (2 - √5)/2

Answer: B

(√5 + 1)/ (√5 - 1) × (√5 + 1)/ (√5 + 1)

= $(\sqrt{5} + 1)^2$/ (5 - 1)

= (5 + 1 + 2√5)/4

= (6 + 2√5)/4

= (3 + √5)/2

28. If O is the orthocenter of a triangle ABC and ∠BOC = 110°, then measure of BAC is.

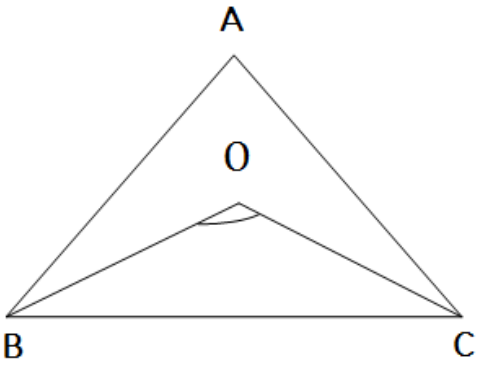
a) 65°

b) 75°

c) 70°

d) 80°

Answer: C



∠BAC = 180° - ∠BOC

∠BAC = 180° - 110°

= 70°

29. What is $(0.8\% \text{ of } 0.008\% \text{ of } 0.8)^{1/9}$?

a) 0.8

b) 0.2

c) 0.64

d) 0.08

Answer: B

$(0.8\% \text{ of } 0.008\% \text{ of } 0.8)^{1/9}$

$= (8/10 \times 1/100 \times 8/1000 \times 1/100 \times 8/10 \times 1/100)^{1/9}$

$= (2^9/10^9)^{1/9}$

= 2/10

= 0.2

30. Sumit gets 10% more marks than Akbar. By what percentage is Akbar's mark less than that of Sumit?

a) 9%

b) 10%

c) 9 (1/11) %

d) 11 (1/9) %

Answer: C

Let Akbar marks =100,

Sumit marks = 110

Required % = 10/110 × 100 = 9 (1/11) %