DSSSB JE

Previous Year Paper

Electrical 16 Mar 2022

GOVT. OF NCT OF DELHI
Delhi Subordinate Services Selection Board
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Participant ID	
Participant Name	
Test Center Name	
Test Date	16/03/2022
Test Time	8:30 AM - 10:30 AM
Subject	Junior Engineer (Elect)

Section : **Mental Ability**

Q.1 Ajay starts from his office and drives 11 km towards the North. He then takes a left turn, drives 3 km, turns left and drives 5 km and reaches his home. In which direction is he from his office?

Ans
- ✗ A. North-east
- ✓ B. North-west
- ✗ C. South-west
- ✗ D. South-east

Question ID : **184122654**

Q.2 In a certain code language

A + B means 'A is the wife of B'.

A – B means 'A is the sister of B'.

A × B means 'A is the father of B'.

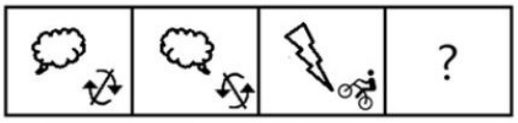
A ÷ B means 'A is the mother of B'.

Based on the above, how is 4 related to 6's mother if '3 + 4 – 2 + 1 × 6'?

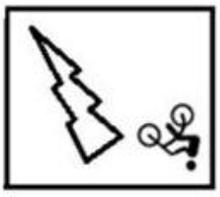
Ans
- ✓ A. Aunt
- ✗ B. Mother-in-law
- ✗ C. Mother
- ✗ D. Sister

Question ID : **184122656**

Q.3 Select the option that is related to figure C in the same way as figure B is related to figure A.



Ans

A.


B.


C.


D.


Question ID : **184122661**

Q.4 Select the option that is related to the fifth number in the same way as the second number is related to the first number and the fourth number is related to the third number.

12756 : 21 :: 35612 : 17 :: 411721 : ?

Ans

A. 18

B. 14

C. 16

D. 15

Question ID : **184122664**

Q.5 In a certain code language, if 'DESKTOP' is written as 'NURIQIB' and 'PRODUCT' is written as 'RAABUPN', then how will 'ABDOMEN' be written in that language?

Ans
- ✔ A. LIKUBZE
- ✘ B. LJKUBZE
- ✘ C. LJKUCZE
- ✘ D. LIKUCZE

Question ID : **184122653**

Q.6 A question is given, followed by two statements labelled (I) and (II). Identify which of the statements is/are sufficient to answer the question.

Question:

Among 5sticks - A, B,C,D and E - each having a different height, which stick is the tallest one?

Statements:

(I) B is taller than E but shorter than D.

(II) Both A and B are shorter than D.

Ans
- ✘ A. Both I and II are sufficient.
- ✘ B. Only II is sufficient.
- ✔ C. Neither I nor II is sufficient.
- ✘ D. Only I is sufficient.

Question ID : **184122657**

Q.7 In a certain code language,

A+ B means 'A is the mother of B'.

A – B means 'A is the brother of B'.

A × Bmeans 'A is the wife of B'.

A ÷ B means 'A is the father of B'.

Based on the above, how is P related to S if 'P × Q ÷ R – T × S'?

Ans
- ✘ A. Father-in-law
- ✔ B. Mother-in-law
- ✘ C. Sister
- ✘ D. Brother

Question ID : **184122652**

Q.8 Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

All the apricots are grapes.

All the grapes are berries.

Conclusions:

(I) All the apricots are berries.

(II) Some grapes are apricots.

Ans

✔ A. Both conclusions I and II follow

✘ B. Only conclusion I follows

✘ C. Neither I nor II follows

✘ D. Only conclusion II follows

Question ID : **184122660**

Q.9 Arnav ranked 105^{th} from the top and 16^{th} from the bottom in his class. How many students are there in the class?

Ans

✘ A. 131

✘ B. 132

✘ C. 129

✔ D. 120

Question ID : **184122650**

Q.10 Solve the following equation.

$45.28-[37.94-\{60.45\div2.76-(6.21-9.02\div3.05)\div2.9\}]=?$

Ans

✘ A. 36

✔ B. 26

✘ C. 45

✘ D. 35

Question ID : **184122666**

Q.11 1,2,3,4,5,6, 7 and 8 are sitting around a square table facing the centre of the table. Some of them are sitting at the corners while some are sitting at the exact centre of the sides. 3 sits third to the right of 7. 3 sits at one of the corners. 2 sits second to the left of 1. 6 does not sit at any of the corners and he is not an immediate neighbour of 5. 8 is an immediate neighbour of 1. 8 does not sit at any of the middle of the sides. Only three people sit between 8 and 3.Who among the following was sitting to the immediate left of 2?

Ans

✔ A. 3

✘ B. 8

✘ C. 7

✘ D. 2

Question ID : **184122648**

Q.12 1,2,3,4,5,6, 7 and 8 are sitting around a square table facing away from the table. Some of them are sitting at the corners while some are sitting at the exact centre of the sides. 5 sits third to the right of 7. 5 sits at one of the corners. 2 sits second to the left of 6. 6 does not sit at any of the corners and he is not an immediate neighbour of 5. 8 is an immediate neighbour of 1. 8 does not sit at any of the middle of the sides. Only three people sit between 8 and 3.Who among the following was sitting to the immediate right of 6?

Ans
✗ A. 8
✗ B. 2
✗ C. 7
✓ D. 4

Question ID : **184122649**

Q.13 Four words have been given, out of which three are alike in some manner and one is different. Select the one that is different.

Ans
✗ A. Appealing
✗ B. Exquisite
✗ C. Alluring
✓ D. Drap

Question ID : **184122659**

Q.14 Select the option that is related to the fifth term in the same way as the second term is related to the first term and the fourth term is related to the third term.

HU 45 : FS 43 :: EL 56 : CJ 54 :: KS 67 : ?

Ans
✗ A. IR 65
✗ B. IT 65
✗ C. JP 65
✓ D. IQ 65

Question ID : **184122658**

Q.15 In a certain code language,

A+ B means 'A is the mother of B'.

A – B means 'A is the brother of B'.

A × B means 'A is the wife of B'.

A ÷ B means 'A is the father of B'.

Based on the above, how is 2 related to 1 if '2 × 3 ÷ 4 – 5 × 6 ÷ 1'?

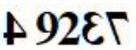
Ans
✓ A. Mother's mother
✗ B. Father's father
✗ C. Father's mother
✗ D. Mother's father

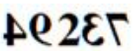
Question ID : **184122655**

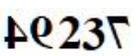
Q.16 Select the correct mirror image of the given number when the mirror is placed at the right side.

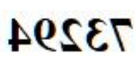
73294

Ans

✗ A. 

✗ B. 

✗ C. 

✓ D. 

Question ID : **184122662**

Q.17 There are eight statues - A to H - placed in a circle, all facing the centre. B and G are opposite each other. D is to the second right of G and second left of B. A and D are opposite. Both B and D are neighbours of F, who is opposite to H. Which of the following statues was placed to the immediate right of A?

Ans

✓ A. H

✗ B. C

✗ C. B

✗ D. F

Question ID : **184122647**

Q.18 Solve the following equation.

$\{13.98-(15.05-3.65 \div 1.99 \times 2.02)\} = ?$

Ans

✗ A. 6

✗ B. 2

✗ C. 4

✓ D. 3

Question ID : **184122665**

Q.19 Five sacks - 1,2,3,4 and 5 - have different weights. 2 is heavier than 5 but lighter than 1. Only one sack is heavier than 4. 1 is not the heaviest. Which of them is the second lightest?

Ans

✗ A. 3

✓ B. 2

✗ C. 1

✗ D. 4

Question ID : **184122651**

Q.20 Select the number from among the given options that can replace the question mark (?) in the following series.

37, 111, 114, 342, 348, 1044, ?

Ans
- ✗ A. 1055
- ✗ B. 1341
- ✗ C. 1056
- ✓ D. 1053

Question ID : **184122663**

Section : **General Awareness**

Q.1 **During whose term was the Rowlatt Act passed in the year 1919?**

Ans
- ✗ A. Lord Irwin
- ✗ B. Lord Wavell
- ✓ C. Lord Chelmsford
- ✗ D. Lord Linlithgow

Question ID : **184122671**

Q.2 **The south-eastern part of which state lies in the Malwa plateau?**

Ans
- ✗ A. Bihar
- ✗ B. West Bengal
- ✓ C. Rajasthan
- ✗ D. Odisha

Question ID : **184122681**

Q.3 **Which of the following is NOT included under right to freedom as per the Indian Constitution?**

Ans
- ✗ A. Move freely throughout the territory of India.
- ✗ B. Formation of associations or unions.
- ✓ C. To promote the religion of one's choice.
- ✗ D. Freedom of speech and expression.

Question ID : **184122686**

Q.4 **Which of the following organisations is responsible for formulating and implementing the Foreign Trade Policy with the main objective of promoting India's exports?**

Ans
- ✗ A. Ministry of Finance
- ✓ B. Directorate General of Foreign Trade (DGFT)
- ✗ C. EXIM Bank
- ✗ D. Reserve Bank of India

Question ID : **184122683**

Q.5 In which year did the Cripps Mission arrive in India?

Ans
- ✗ A. 1922
- ✗ B. 1939
- ✗ C. 1932
- ✓ D. 1942

Question ID : **184122672**

Q.6 Buddhist Architecture is primarily represented by three prominent building types of which Chaitya Hall is used as a:

Ans
- ✗ A. court
- ✗ B. monastery
- ✗ C. music room
- ✓ D. place of worship

Question ID : **184122673**

Q.7 Who presented the first (provisional) budget of independent India on 26 November 1947?

Ans
- ✗ A. Sardar Vallabhbhai Patel
- ✗ B. Kailash Nath Katju
- ✓ C. Shanmukham Chetty
- ✗ D. Jawaharlal Nehru

Question ID : **184122678**

Q.8 World Population Day is observed on:

Ans
- ✗ A. 11th October
- ✓ B. 11th July
- ✗ C. 11th August
- ✗ D. 11th September

Question ID : **184122668**

Q.9 What is the name of the outermost range of the Himalayas?

Ans
- ✗ A. Purvanchal
- ✓ B. Shiwaliks
- ✗ C. Duns
- ✗ D. Kumoan

Question ID : **184122680**

Q.10 According to the rules and regulations of BCCI (Board of Control. for Cricket in India), who among the following is NOT a match official?

Ans
✗ A. Scorer
✓ B. Team captain
✗ C. Referee
✗ D. Umpire

Question ID : **184122670**

Q.11 The Sarvodaya Five-Year plan which was inspired by Gandhian ideals was drafted by:

Ans
✗ A. Gopal Krishna Gokhale
✓ B. Jai Prakash Narayan
✗ C. Sardar Vallabhbhai Patel
✗ D. Maulana Abul Kalam

Question ID : **184122677**

Q.12 The Bhadla Solar Park has become the world's largest solar park, with 2,245 MW of solar projects commissioned. Where is this park located?

Ans
✓ A. Rajasthan
✗ B. Telangana
✗ C. Tamil Nadu
✗ D. Maharashtra

Question ID : **184122667**

Q.13 According to which theory or law can no object with mass travel as fast as the speed of light in an empty space (in vacuum)?

Ans
✗ A. Dalton's law
✗ B. Corpuscular theory of light
✓ C. Theory of relativity
✗ D. Henry's law

Question ID : **184122684**

Q.14 Which of the following is NOT one of the fundamental duties of Indian citizens as per the Indian Constitution?

Ans
✗ A. To cherish and follow the noble ideals which inspired our national struggle for freedom.
✗ B. To uphold and protect the sovereignty, unity, and integrity of India.
✓ C. To follow all religious norms under all circumstances.
✗ D. To value and preserve the rich heritage of our composite culture.

Question ID : **184122685**

Q.15 The Indian Olympic Association is the governing body for the Olympics and what other games in which India participates?

Ans
✔ A. Commonwealth Games
✘ B. Afro-Asian Games
✘ C. Australian Open
✘ D. Asian Games

Question ID : **184122669**

Q.16 Approximately how many classical taals, or cycles of rhythms are there in classical Carnatic music?

Ans
✘ A. 98
✘ B. 78
✘ C. 88
✔ D. 108

Question ID : **184122676**

Q.17 In which year was Mohenjo-Daro city proclaimed a World Heritage Site by UNESCO?

Ans
✘ A. 1990
✘ B. 1975
✘ C. 1965
✔ D. 1980

Question ID : **184122674**

Q.18 Pandit Birju Maharaj who choreographed the famous song 'Kahe Chhed Mohe' from the movie Devdas and 'Mohe Rang Do Laal' from Bajirao Mastani is an exponent of which classical dance?

Ans
✘ A. Kuchipudi
✔ B. Kathak
✘ C. Odissi
✘ D. Bharatanatyam

Question ID : **184122675**

Q.19 Which of the following countries has the best rank in UNDP Human Development Index Report 2020?

Ans
✘ A. Bangladesh
✔ B. India
✘ C. Afghanistan
✘ D. Pakistan

Question ID : **184122679**

Q.20 **According to the report (2011) of Ministry of Housing and Urban affairs, which state in India is the most urbanised with 62.2 per cent urban population?**

Ans

✗ A. Uttar Pradesh

✗ B. Andhra Pradesh

✗ C. Punjab

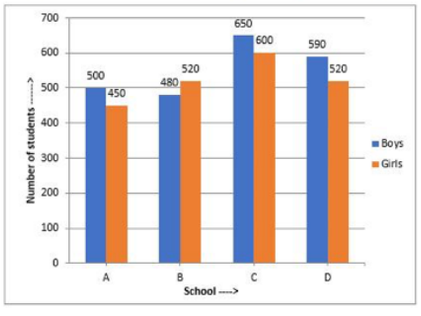
✓ D. Goa

Question ID : **184122682**

Section : **Arithmetic Ability**

Q.1 Study the given graph and answer the questions that follow.

The graph shows the number of students (boys and girls) in four different schools as of 1 July 2020.



What is the difference between the average number of boys in schools B and D and the average number of girls in schools A and C?

Ans

✗ A. 12

✗ B. 8

✓ C. 10

✗ D. 15

Question ID : **184122703**

Q.2 The simple interest on a certain sum for $4\frac{4}{5}$ years at 10.5% p.a. is ₹ 6,249.60. What will be the simple interest on the same sum for $7\frac{1}{2}$ years at the same rate of interest?

Ans

✓ A. ₹9,765

✗ B. ₹9,114

✗ C. ₹9,575

✗ D. ₹9,785

Question ID : **184122697**

Q.3 The average age of A, B and C 6 years ago was 30 years. The average age of A and C 2 years ago was 31.5 years. What is the present age (in years) of B?

Ans
- ✗ A. 43
- ✗ B. 36
- ✓ C. 41
- ✗ D. 31

Question ID : **184122690**

Q.4 A laptop is sold for ₹28,512 after three successive discounts of 10%, 12% and 25% on its marked price. If it is sold at a single discount of 57%, then what will be its selling price?

Ans
- ✓ A. ₹20,640
- ✗ B. ₹25,860
- ✗ C. ₹25,680
- ✗ D. ₹22,460

Question ID : **184122694**

Q.5 A man travels $33\frac{1}{3}$% of the total distance at 15 km/h, the next 25% of the total distance at 18 km/h and the remaining at a speed of 'y' km/h. If his average speed for the whole journey is 20 km/h, then what is the value of 'y'?

Ans
- ✗ A. 35 km/h
- ✓ B. 30 km/h
- ✗ C. 40 km/h
- ✗ D. 25 km/h

Question ID : **184122699**

Q.6 Three solid metallic sphere balls of radii 12 cm, 16 cm and 'x' cm are melted to form a solid sphere of radius 24 cm. What is the volume (in cm^3) of the ball whose radius is 'x' cm? (Nearest to an integer)

Ans
- ✗ A. 34,525
- ✗ B. 34,536
- ✗ C. 33,544
- ✓ D. 33,524

Question ID : **184122706**

Q.7 In an examination, out of the total number of students who appeared, 48% are boys and the rest are girls. If 45% of the boys failed and 60% of the girls passed, then what is the percentage of the students who failed?

Ans
- ✗ A. 44%
- ✗ B. 41.8%
- ✗ C. 42%
- ✓ D. 42.4%

Question ID : **184122692**

Q.8 What is the angle (in degrees) between the minute hand and the hour hand of a clock when the time is 22 minutes past 5 o'clock?

Ans
- ✔ A. 29
- ✘ B. 28
- ✘ C. 27
- ✘ D. 30

Question ID : **184122700**

Q.9 The ages (in years) of A and B six years ago, was in the ratio 7 : 8. The ratio of their present ages is 9 : 10. What will be the ratio of ages of A and B three years from now?

Ans
- ✘ A. 11 : 12
- ✘ B. 8 : 9
- ✔ C. 10 : 11
- ✘ D. 3 : 4

Question ID : **184122695**

Q.10 What is the value of $\frac{1.0\overline{5} \div 0.\overline{95} \times 0.4\overline{09}}{(0.\overline{29} \div 0.3\overline{2}) \div 0.\overline{15}}$?

Ans
- ✘ A. $\frac{9}{20}$
- ✔ B. $\frac{3}{40}$
- ✘ C. $\frac{4}{15}$
- ✘ D. $\frac{3}{4}$

Question ID : **184122687**

Q.11 Study the given table and answer the questions that follow.

The table shows the sale of vehicles (cars and two-wheelers) during 2016 to 2020 (in thousands).

Year / Vehicles	2016	2017	2018	2019	2020
Cars	480	500	475	600	550
Scooters	300	400	360	380	450
Motorcycles	280	320	275	345	420

The average number of scooters (per year) sold in 2016, 2017 and 2019 is what per cent of the total number of cars sold in 2017 and 2020? (Correct to one decimal place.)

Ans
- ✘ A. 32.8%
- ✘ B. 35.2%
- ✘ C. 33.3%
- ✔ D. 34.3%

Question ID : **184122702**

Q.12 Sujatha bought a washing machine for ₹9,600 and spent ₹400 on its shipping. She sold it at 18.5% profit. From the money which she got now, she bought another washing machine and sold it at 10% loss. What is her overall loss/profit percentage?

Ans
- ✗ A. Loss, 8.65%
- ✓ B. Profit, 6.65%
- ✗ C. Profit, 6.9%
- ✗ D. Loss, 6.9%

Question ID : **184122693**

Q.13 A and B together can complete a certain work in 40 days, whereas B and C together can complete it in 60 days. A, B and C together can complete the same work in 30 days. B alone can complete one-third of the same work in _____.

Ans
- ✗ A. 36 days
- ✗ B. 45 days
- ✓ C. 40 days
- ✗ D. 42 days

Question ID : **184122701**

Q.14 The HCF and LCM of two numbers are 45 and 540, respectively. If one of the numbers lies between 125 and 140, then the other number is _____.

Ans
- ✗ A. 225
- ✓ B. 180
- ✗ C. 270
- ✗ D. 135

Question ID : **184122688**

Q.15 Surya travels from point A to B and then from point B to C at 50 km/h and 60 km/h, respectively. He then returns to point A at 'x' km/h. The distances between A to B and B to C are in the ratio of 1 : 2. If his average speed for the entire journey is 50 km/h, then what is the value of 'x'?

Ans
- ✓ A. 45
- ✗ B. 40
- ✗ C. 42
- ✗ D. 36

Question ID : **184122691**

Q.16 In a class, there are 72 students out of which 75% of the students are girls and the rest are boys. In an examination, the average score of the boys is 50% more than that of the girls. If the average score of all the students is 63, then what is the average score of the girls?

Ans
- ✗ A. 54
- ✗ B. 60
- ✗ C. 52
- ✓ D. 56

Question ID : **184122689**

Q.17 A varies directly as $\sqrt{B}$. When B = 9, A = 5. When A = 4.5, then B = _____.

Ans
✗ A. 6.25
✗ B. 5.76
✓ C. 7.29
✗ D. 4.84

Question ID : **184122696**

Q.18 The sides of a triangular field are 48 m, 55 m and 73 m. What is the cost of levelling the field at ₹10.50 per m^2?

Ans
✗ A. ₹15,120
✗ B. ₹13,230
✗ C. ₹14,240
✓ D. ₹13,860

Question ID : **184122704**

Q.19 What is the compound interest (in ₹) on a sum of ₹1,20,000 for $2\frac{3}{5}$ years at 10% p. a., interest compounded annually?

Ans
✓ A. 33,912
✗ B. 39,720
✗ C. 35,270
✗ D. 32,921

Question ID : **184122698**

Q.20 The perimeter of a circular park is twice the perimeter of a rectangular garden. The area of the circular park is 5,544 m^2.

If the breadth of the rectangular garden is 26 m, then what is the area (in m^2) of the rectangular garden? (Take $\pi = \frac{22}{7}$)

Ans
✗ A. 1092
✓ B. 1040
✗ C. 988
✗ D. 1014

Question ID : **184122705**

Section : **General English**

Q.1 **Choose the correct passive voice form of the given sentence:**
Who told you my name?

Ans
✗ A. By whom were my name told to you?
✗ B. By whom was you told the name?
✓ C. By whom were you told my name?
✗ D. Who were you told my name?

Question ID : **184122707**

Q.2 **Pick up the expression that conveys the sense of the following:**
You can't judge a book by its cover.

Ans
- ✗ A. The cover of a book is important.
- ✗ B. Read the books carefully.
- ✗ C. Don't be judgemental.
- ✓ D. Outer appearance doesn't indicate the character.

Question ID : **184122717**

Q.3 **Fill in the blank:**

You can take the bike _____ you promise not to drive too fast.

Ans
- ✗ A. either
- ✗ B. merely
- ✓ C. so long as
- ✗ D. as good as

Question ID : **184122709**

Q.4 **Fill in the blank.**

_____ time progressed, he got more appreciation.

Ans
- ✓ A. as
- ✗ B. instead
- ✗ C. either
- ✗ D. as if

Question ID : **184122710**

Q.5 **Choose the correct active voice form of the given sentence:**
The project had been completed by them before the deadline.

Ans
- ✗ A. They had been completing the project before the deadline.
- ✓ B. They had completed the project before the deadline.
- ✗ C. They completed the project before the deadline.
- ✗ D. They have completed the project before the deadline.

Question ID : **184122708**

Q.6 **Choose the option that has an opposite meaning to 'invincible'.**

Ans
- ✗ A. Unconquerable
- ✗ B. Indomitable
- ✗ C. Unyielding
- ✓ D. Vulnerable

Question ID : **184122715**

Q.7 **Pick up the expression that conveys the correct/popular sense of 'At the mercy of':**

Ans
- ✗ A. At a distance from
- ✗ B. Straight forward
- ✓ C. Dependent on
- ✗ D. Irrelevant

Question ID : **184122716**

Q.8 **Complete the sentence:**
If they had helped me in time _____.

Ans
- ✗ A. I would have succeeded.
- ✗ B. I will succeed.
- ✗ C. I would like to succeed.
- ✓ D. I would succeed.

Question ID : **184122719**

Q.9 **Pick up the correct sentence:**

Ans
- ✓ A. Sheena asked me not to tell anybody what had happened.
- ✗ B. Sheena asks me to not tell anybody what have happened.
- ✗ C. Sheena ask me do not to tell anybody what had happened.
- ✗ D. Sheena asks me to not to tell anybody what had happened.

Question ID : **184122720**

Q.10 **Which of the given expressions does not express the future?**

Ans
- ✓ A. He'd already paid the fee.
- ✗ B. He would be going soon.
- ✗ C. I'd pay the fee in advance.
- ✗ D. What are you going to do with this money?

Question ID : **184122713**

Q.11 **Choose the correct form of direct speech:**
Shiva says that he has resigned.

Ans
- ✓ A. Shiva says, "I have resigned."
- ✗ B. Shiva says, "He resigned."
- ✗ C. Shiva said, "I have resigned."
- ✗ D. Shiva has said, "He has resigned."

Question ID : **184122712**

Q.12 **Pick up the expression that conveys the sense of the following:**
Better to wear out than to rust out.

Ans
✔ A. It is better to be active than to be idle.
✘ B. Health is far better than money.
✘ C. Honesty is a great virtue.
✘ D. Wear a good dress when you go out.

Question ID : **184122718**

Q.13 **Choose the correct form of reported speech:**
Suman said to her father, "I will phone you from the office when I reach."

Ans
✔ A. Suman informed her father that she would phone him from the office when she reached.
✘ B. Suman informed her father if she would phone him from the office when she reached.
✘ C. Suman informed her father that she will phone her from the office when she will reach.
✘ D. Suman informed her father that she phones him from the office when she reaches.

Question ID : **184122711**

Q.14 **Choose the correct expression of past tense:**

Ans
✘ A. I use to play all evening.
✘ B. Where did you gone?
✔ C. Sami didn't buy anything.
✘ D. Where has he gone?

Question ID : **184122714**

Q.15 **Pick the correct option to complete the sentence:**
You don't look very well. You'd better not _____.

Ans
✔ A. Go to work today
✘ B. Neither work
✘ C. Didn't work hard
✘ D. To go to work now

Question ID : **184122721**

Comprehension:

Read the following passage and answer the questions that follow:
A person's ability to enjoy their human rights depends on other people respecting those rights. This means that human rights involve responsibilites and duties towards other people and the community. Individuals have a responsibility to ensure that they exercise their rights with consideration for the rights of others. The nineteenth and early twentieth centuries saw continuing advances in social progress, for example, in the abolition of slavery, the widespread provision of education and the extension of political rights. Despite these advances, international activity on human rights remained weak. The general attitude was that nations could do what they liked within their borders and that other countries and the broader international community had no basis for intervening or even raising concerns when rights were violated. This is expressed in the term 'state sovereignty', which refers to the idea that whoever has the political authority within a country has the power to rule and pass laws over that territory. Importantly, countries agree to mutually recognise this sovereignty. In doing so, they agree to refrain from interfering in the internal or external affairs of other sovereign states. However, the atrocities and human rights violations that occurred during World War II galvanised worldwide opinion and made human rights a universal concern.

SubQuestion No : 16

Q.16 What, according to the passage, prompted the world to consider human rights a universal concern?

Ans

✔ A. Atrocities and human rights violations that occurred during World War II.

✘ B. Political authority within a country.

✘ C. Mutual recognition of sovereignty.

✘ D. Ability to enjoy their human rights.

Question ID : **184122727**

Comprehension:

Read the following passage and answer the questions that follow:
A person's ability to enjoy their human rights depends on other people respecting those rights. This means that human rights involve responsibilites and duties towards other people and the community. Individuals have a responsibility to ensure that they exercise their rights with consideration for the rights of others. The nineteenth and early twentieth centuries saw continuing advances in social progress, for example, in the abolition of slavery, the widespread provision of education and the extension of political rights. Despite these advances, international activity on human rights remained weak. The general attitude was that nations could do what they liked within their borders and that other countries and the broader international community had no basis for intervening or even raising concerns when rights were violated. This is expressed in the term 'state sovereignty', which refers to the idea that whoever has the political authority within a country has the power to rule and pass laws over that territory. Importantly, countries agree to mutually recognise this sovereignty. In doing so, they agree to refrain from interfering in the internal or external affairs of other sovereign states. However, the atrocities and human rights violations that occurred during World War II galvanised worldwide opinion and made human rights a universal concern.

SubQuestion No : 17

Q.17 Which of the following is not relevant to human rights in the context of the passage?

Ans

✔ A. Human rights do not entail any responsibility.

✘ B. Despite advances in social progress, international activity on human rights remained weak.

✘ C. Human rights came to be a universal concern after the II World War.

✘ D. A person's ability to enjoy their human rights depends on other people respecting those rights.

Question ID : **184122725**

Comprehension:

Read the following passage and answer the questions that follow:
A person's ability to enjoy their human rights depends on other people respecting those rights. This means that human rights involve responsibilites and duties towards other people and the community. Individuals have a responsibility to ensure that they exercise their rights with consideration for the rights of others. The nineteenth and early twentieth centuries saw continuing advances in social progress, for example, in the abolition of slavery, the widespread provision of education and the extension of political rights. Despite these advances, international activity on human rights remained weak. The general attitude was that nations could do what they liked within their borders and that other countries and the broader international community had no basis for intervening or even raising concerns when rights were violated. This is expressed in the term 'state sovereignty', which refers to the idea that whoever has the political authority within a country has the power to rule and pass laws over that territory. Importantly, countries agree to mutually recognise this sovereignty. In doing so, they agree to refrain from interfering in the internal or external affairs of other sovereign states. However, the atrocities and human rights violations that occurred during World War II galvanised worldwide opinion and made human rights a universal concern.

SubQuestion No : 18

Q.18 Which of the following words in the passage means opposite to 'restricted'?

Ans
✗ A. Slavery
✓ B. Widespread
✗ C. Political
✗ D. Responsibility

Question ID : **184122723**

Comprehension:

Read the following passage and answer the questions that follow:
A person's ability to enjoy their human rights depends on other people respecting those rights. This means that human rights involve responsibilites and duties towards other people and the community. Individuals have a responsibility to ensure that they exercise their rights with consideration for the rights of others. The nineteenth and early twentieth centuries saw continuing advances in social progress, for example, in the abolition of slavery, the widespread provision of education and the extension of political rights. Despite these advances, international activity on human rights remained weak. The general attitude was that nations could do what they liked within their borders and that other countries and the broader international community had no basis for intervening or even raising concerns when rights were violated. This is expressed in the term 'state sovereignty', which refers to the idea that whoever has the political authority within a country has the power to rule and pass laws over that territory. Importantly, countries agree to mutually recognise this sovereignty. In doing so, they agree to refrain from interfering in the internal or external affairs of other sovereign states. However, the atrocities and human rights violations that occurred during World War II galvanised worldwide opinion and made human rights a universal concern.

SubQuestion No : 19

Q.19 Which of the following words in the passage means 'authority to govern a country'?

Ans
✗ A. Intervene
✓ B. Sovereignty
✗ C. Human-right
✗ D. Galvanise

Question ID : **184122726**

Comprehension:

Read the following passage and answer the questions that follow:
A person's ability to enjoy their human rights depends on other people respecting those rights. This means that human rights involve responsibilites and duties towards other people and the community. Individuals have a responsibility to ensure that they exercise their rights with consideration for the rights of others. The nineteenth and early twentieth centuries saw continuing advances in social progress, for example, in the abolition of slavery, the widespread provision of education and the extension of political rights. Despite these advances, international activity on human rights remained weak. The general attitude was that nations could do what they liked within their borders and that other countries and the broader international community had no basis for intervening or even raising concerns when rights were violated. This is expressed in the term 'state sovereignty', which refers to the idea that whoever has the political authority within a country has the power to rule and pass laws over that territory. Importantly, countries agree to mutually recognise this sovereignty. In doing so, they agree to refrain from interfering in the internal or external affairs of other sovereign states. However, the atrocities and human rights violations that occurred during World War II galvanised worldwide opinion and made human rights a universal concern.

SubQuestion No : 20

Q.20 Which of the following words in the passage means 'an area of land or sea that belongs to a country'?

Ans
✗ A. community
✓ B. Territory
✗ C. Nation
✗ D. Worldwide

Question ID : **184122724**

Section : **General Hindi**

Q.1 'रोग ग्रस्त' का समास-विग्रह 'रोग से ग्रस्त' में समास है?

Ans
✗ A. बहुव्रीहि
✓ B. तत्पुरुष
✗ C. द्विगु
✗ D. कर्मधारय

Question ID : **184122732**

Q.2 निम्नलिखित में से कौन संप्रदान कारक का उदाहरण नहीं है?

Ans
✗ A. तुलसी के वास्ते ही जैसे राम ने अवतार लिया।
✗ B. मां ने बच्चों को खिलोने खरीदे।
✗ C. राम के लिए लक्ष्मण वन गए।
✓ D. हरि मोहन को मारता है।

Question ID : **184122728**

Q.3 निम्न में से कौन व्यंजन संधि का उदाहरण नहीं है?

Ans
✗ A. उन्नति
✗ B. जगन्नाथ
✗ C. वांडमय
✓ D. मनोरथ

Question ID : **184122730**

Q.4 'वह देखता है' - यह वाक्य वर्तमान काल के किस भेद से संबंधित है?

Ans
✔ A. सामान्य वर्तमान
✘ B. तात्कालिक वर्तमान
✘ C. पूर्ण वर्तमान
✘ D. संभाव्य वर्तमान

Question ID : **184122742**

Q.5 'वह कमाए तो खाए' - यह वाक्य भविष्यत काल के किस भेद का है?

Ans
✔ A. हेतुहेतुमद भविष्य
✘ B. सामान्य भविष्य
✘ C. संभाव्य भविष्य
✘ D. विशिष्ट भविष्य

Question ID : **184122740**

Q.6 'पीताम्बर' शब्द का बहुव्रीहि समास में उपयुक्त समास-विग्रह होगा?

Ans
✘ A. पीत अम्बर
✔ B. पीत है अम्बर जिसका वह
✘ C. पीला वस्त्र
✘ D. पीला है कपड़ा

Question ID : **184122731**

Q.7 'तुमने गाना गाया होगा' - यह वाक्य भूतकाल के किस भेद का है?

Ans
✘ A. पूर्ण भूत
✘ B. आसन्न भूत
✘ C. सामान्य भूत
✔ D. संदिग्ध भूत

Question ID : **184122741**

Q.8 'एक तंदुरुस्ती हजार नियामत' लोकोक्ति का उपयुक्त अर्थ है?

Ans
✘ A. सफल होना
✘ B. ईमानदारी महत्वपूर्ण
✔ C. स्वास्थ्य बहुत बड़ी चीज
✘ D. बीमारी होना

Question ID : **184122739**

Q.9 मैया मैं तो चंद्र खिलौना लैहों'
यहाँ अलंकार है?

Ans
✘ A. उत्प्रेक्षा
✘ B. उपमा
✔ C. रूपक
✘ D. काव्य लिंग

Question ID : **184122733**

Q.10 हनुमान की पूंछ में लगन न पाई आग।
लंका सिगरी जल गई, गए निसाचर भागा।'
इसमें अलंकार है?

Ans
✗ A. उत्प्रेक्षा
✗ B. उपमा
✗ C. रूपक
✓ D. अतिशयोक्ति

Question ID : **184122734**

Q.11 निम्न में से कौन सा शब्द 'सूर्य' का पर्यायवाची नहीं है?

Ans
✓ A. मयंक
✗ B. सविता
✗ C. दिनकर
✗ D. भास्कर

Question ID : **184122736**

Q.12 बंदऊँ गुरुपद पदुम परागा'
इसमें अलंकार है:

Ans
✗ A. वक्रोक्ति
✗ B. यमक
✗ C. उपमा
✓ D. अनुप्रास

Question ID : **184122735**

Q.13 'अथ' शब्द का सर्वाधिक उपयुक्त विलोम शब्द है?

Ans
✗ A. प्रवृति
✗ B. प्रारंभ
✓ C. इति
✗ D. शुरुआत

Question ID : **184122737**

Q.14 'कमर टूटना' मुहावरे का उपयुक्त अर्थ है?

Ans
✗ A. लाभ होना
✗ B. परेशान होना
✓ C. बहुत नुकसान होना
✗ D. खुश होना

Question ID : **184122738**

Q.15 निम्न में से किस वाक्य में संयुक्त क्रिया का प्रयोग नहीं है?

Ans
✗ A. सोहन हंसने लगा।
✗ B. वह घर पहुँच गया।
✗ C. घनश्याम रो चुका।
✓ D. उसने रोटी खाई।

Question ID : **184122729**

Comprehension:

बाजार में, विज्ञापन ने हिंदी को एक क्रांतिकारी रूप दिया जिसमें रवानगी है, स्वाद है, रोमांच है, आज की सबसे बड़ी चाहत का अकूत संसार है। इस तरह हिंदी भविष्य की भाषा, समय का तकाजा और रोजगार की जरूरत बनती जा रही है।
लोकतंत्र का चौथा स्तंभ पत्रकारिता है। सूचना क्रांति ने विश्व को ग्राम बना दिया है। मीडिया की जागरूकता ने समाज में एक क्रांति ला दी है और इस क्रांति की भाषा हिंदी है। इतने सारे समाचार चैनल हैं और सभी चैनलों पर हिंदी अपने हर रूप में नए कलेवर, तेवर में निखरकर, संवरकर, लहरकर अर्थात बिंदास बनकर छाई रहती है। तुलनात्मक अर्थों में आज अंग्रेजी पत्रकारिता का मूल्य, बाजार, उत्पादन, उपभोग और वितरण बहुत बड़ा है।
प्रिंट मीडिया की स्थिति ज्यादा बेहतर है ।पत्र-पत्रिकाओं की लाखों प्रतियां रोजाना बिकती हैं। चीन के बाद सबसे अधिक अखबार हमारे यहां पढ़े जाते हैं। हिंदी के सर्वेक्षण की यह मानवीय ,रचनात्मक और सारगर्भित उपलब्धि है। पत्र -पत्रिकाएं हिंदी की गुणवत्ता और प्रचार- प्रसार के लिए कृत संकल्प हैं।
यह भ्रम फैलाया गया था कि हिंदी रोजगारोन्मुखी नहीं है। आज सरकारी, गैर सरकारी क्षेत्रों में करोड़ों हिंदी पढ़े लिखे लोग आजीविका कमा रहे हैं। भविष्य में हिंदी की बाजार मांग और अधिक होगी।
पसीनों में, प्रार्थनाओं में, सिरहानों की सिसकियों में और हमारे सपनों में जब तक हिंदी रहेगी, तब तक वह बिना किसी पीड़ा या रोग के सप्राण, सवाक और सस्वर रहेगी।

SubQuestion No : 16

Q.16 सूचना क्रांति ने विश्व को बना दिया है -

Ans
✗ A. कस्बा
✗ B. नगर
✗ C. शहर
✓ D. ग्राम

Question ID : **184122747**

Comprehension:

बाजार में, विज्ञापन ने हिंदी को एक क्रांतिकारी रूप दिया जिसमें रवानगी है, स्वाद है, रोमांच है, आज की सबसे बड़ी चाहत का अकूत संसार है। इस तरह हिंदी भविष्य की भाषा, समय का तकाजा और रोजगार की जरूरत बनती जा रही है।
लोकतंत्र का चौथा स्तंभ पत्रकारिता है। सूचना क्रांति ने विश्व को ग्राम बना दिया है। मीडिया की जागरूकता ने समाज में एक क्रांति ला दी है और इस क्रांति की भाषा हिंदी है। इतने सारे समाचार चैनल हैं और सभी चैनलों पर हिंदी अपने हर रूप में नए कलेवर, तेवर में निखरकर, संवरकर, लहरकर अर्थात बिंदास बनकर छाई रहती है। तुलनात्मक अर्थों में आज अंग्रेजी पत्रकारिता का मूल्य, बाजार, उत्पादन, उपभोग और वितरण बहुत बड़ा है।
प्रिंट मीडिया की स्थिति ज्यादा बेहतर है ।पत्र-पत्रिकाओं की लाखों प्रतियां रोजाना बिकती हैं। चीन के बाद सबसे अधिक अखबार हमारे यहां पढ़े जाते हैं। हिंदी के सर्वेक्षण की यह मानवीय ,रचनात्मक और सारगर्भित उपलब्धि है। पत्र -पत्रिकाएं हिंदी की गुणवत्ता और प्रचार- प्रसार के लिए कृत संकल्प हैं।
यह भ्रम फैलाया गया था कि हिंदी रोजगारोन्मुखी नहीं है। आज सरकारी, गैर सरकारी क्षेत्रों में करोड़ों हिंदी पढ़े लिखे लोग आजीविका कमा रहे हैं। भविष्य में हिंदी की बाजार मांग और अधिक होगी।
पसीनों में, प्रार्थनाओं में, सिरहानों की सिसकियों में और हमारे सपनों में जब तक हिंदी रहेगी, तब तक वह बिना किसी पीड़ा या रोग के सप्राण, सवाक और सस्वर रहेगी।

SubQuestion No : 17

Q.17 इनमें से कौन सा विकल्प हिंदी के संदर्भ में असत्य है?

Ans
✗ A. भविष्य की भाषा
✓ B. बातचीत की भाषा
✗ C. समय का तकाजा
✗ D. रोजगार की जरूरत

Question ID : **184122746**

Comprehension:

बाजार में, विज्ञापन ने हिंदी को एक क्रांतिकारी रूप दिया जिसमें रवानगी है, स्वाद है, रोमांच है, आज की सबसे बड़ी चाहत का अकूत संसार है। इस तरह हिंदी भविष्य की भाषा, समय का तकाजा और रोजगार की जरूरत बनती जा रही है।
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SubQuestion No : 18

Q.18 उपर्युक्त गद्यांश के लिए सर्वाधिक उपयुक्त शीर्षक है?

Ans

✗ A. हिंदी का व्याकरण

✗ B. हिंदी की कविताएं

✗ C. हिंदी का साहित्य

✓ D. हिंदी सबकी भाषा

Question ID : **184122744**

Comprehension:

बाजार में, विज्ञापन ने हिंदी को एक क्रांतिकारी रूप दिया जिसमें रवानगी है, स्वाद है, रोमांच है, आज की सबसे बड़ी चाहत का अकूत संसार है। इस तरह हिंदी भविष्य की भाषा, समय का तकाजा और रोजगार की जरूरत बनती जा रही है।
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SubQuestion No : 19

Q.19 लोकतंत्र का चौथा स्तंभ किसे कहा गया है?

Ans

✓ A. पत्रकारिता

✗ B. हिंदी

✗ C. सूचना क्रांति

✗ D. बाजार

Question ID : **184122745**

Comprehension:

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पसीनों में, प्रार्थनाओं में, सिरहानों की सिसकियों में और हमारे सपनों में जब तक हिंदी रहेगी, तब तक वह बिना किसी पीड़ा या रोग के सप्राण, सवाक और सस्वर रहेगी।

SubQuestion No : 20

Q.20 प्रिंट मीडिया के अंतर्गत शामिल है -

Ans

✗ A. टेलीविजन

✗ B. रेडियो

✗ C. इंटरनेट

✓ D. पत्र- पत्रिकाएं

Question ID : **184122748**

Section : **Discipline1**

Q.1 A single logic gate in a prototype integrated circuit is found to be capable of switching from the 'on' state to the 'off' state in 12 ps. This corresponds to:

Ans

✗ A. 0.12 ns

✓ B. 0.012 ns

✗ C. 1.2 ns

✗ D. 120 ns

Question ID : **184122767**

Q.2 An adiabatic system:

Ans

✗ A. is thermally non-insulated from its surrounding

✗ B. can absorb heat

✗ C. has zero resistance

✓ D. is thermally insulated from its surrounding

Question ID : **184122760**

Q.3 As per joule's law, the internal energy of a perfect gas is a function of:

Ans
✗ A. moisture
✗ B. volume
✓ C. temperature
✗ D. heat radiation

Question ID : **184122764**

Q.4 The ratio of lateral strain to linear strain is known as:

Ans
✓ A. Poisson's ratio
✗ B. Molecular ratio
✗ C. Absolute ratio
✗ D. Thermal ratio

Question ID : **184122766**

Q.5 Which of the following is NOT required to attain a state of thermodynamic equilibrium?

Ans
✓ A. Electrical equilibrium
✗ B. Mechanical equilibrium
✗ C. Thermal equilibrium
✗ D. Chemical equilibrium

Question ID : **184122761**

Q.6 If $F(y) = by + 10$, $F(1) = 15$, then the value of b is:

Ans
✗ A. 10
✗ B. 15
✗ C. 20
✓ D. 5

Question ID : **184122759**

Q.7 A coin is tossed three times in succession. If the first toss produces a tale, then the probability of getting exactly two tales in three tosses is:

Ans
A. $\frac{3}{7}$ ✗
B. $\frac{3}{4}$ ✗
C. $\frac{1}{4}$ ✗
D. $\frac{1}{2}$ ✓

Question ID : **184122756**

Q.8 Which of the following is used as an Agriculture Fertilizer?

Ans
A. Bio-Ethane ✗
B. Bio Ethanol ✗
C. Digestate ✓
D. Bio-methanol ✗

Question ID : **184122752**

Q.9 In petrol knocking, which phenomenon of the fuel is seen?

Ans
A. Fire ignition ✗
B. Pre-ignition ✓
C. Crack ignition ✗
D. Post ignition ✗

Question ID : **184122749**

Q.10 Canada balsam has a refractive index of:

Ans
A. 2.6 ✗
B. 1 ✗
C. 1.95 ✗
D. 1.5 ✓

Question ID : **184122755**

Q.11 Which of the following is NOT an example of direct stress?

Ans
✗ A. Torsion
✗ B. Compression
✗ C. Tension
✓ D. Shear

Question ID : **184122765**

Q.12 Which of the following units is given by International System for measurement of physical quantities?

Ans
✓ A. SI Units
✗ B. I Units
✗ C. IS Units
✗ D. S Units

Question ID : **184122754**

Q.13 What will be the value of the magnetic field outside a solenoid?

Ans
✓ A. Negligible
✗ B. Of the order of 100
✗ C. Of the order of 1000
✗ D. Infinite

Question ID : **184122753**

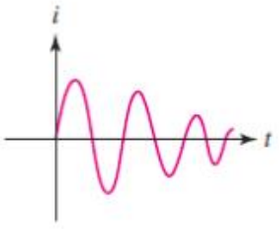
Q.14 In the given expression, what is the value of P?

$$P = \int_1^{\infty} x^{-3}\, dx$$

Ans
✗ A. $\frac{1}{4}$
✗ B. 1
✓ C. $\frac{1}{2}$
✗ D. $-\frac{1}{3}$

Question ID : **184122757**

Q.15 The current signal shown in below figure is a/an:



Ans
✗ A. direct current
✗ B. sinusoidal current
✗ C. exponential current
✓ D. damped sinusoidal current

Question ID : **184122768**

Q.16 If $f(x) = \log(\cos x)$, find $f(0)$.

Ans
✗ A. ∞
✗ B. 1
✓ C. 0
✗ D. 90 degrees

Question ID : **184122758**

Q.17 As per the kinetic theory of heat:

Ans
✓ A. at absolute zero there is no vibration of molecules
✗ B. temperature should rise during the heat transfer
✗ C. at low temperature all bodies are in a liquid state
✗ D. temperature should fall during freezing

Question ID : **184122763**

Q.18 Which of the following is a character of a fuel cell?

Ans
✗ A. High vibration
✗ B. No heat transfer
✗ C. High noise level
✓ D. High efficiency

Question ID : **184122751**

Q.19 Quasi static process is:

Ans
- ✔ A. an irreversible process
- ✘ B. a neutral process
- ✘ C. a reversible process
- ✘ D. a toxic process

Question ID : **184122762**

Q.20 For Catalytic Cracking, which catalyst is used?

Ans
- ✘ A. NaCl
- ✘ B. KCl
- ✔ C. Al_2O_3
- ✘ D. $ZnSO_4$

Question ID : **184122750**

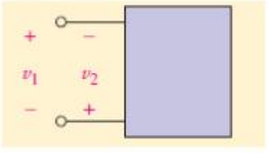
Section : **Discipline2**

Q.1 How is the arc defined in a computer aided drafting drawing?

Ans
- ✘ A. Radius and two end points
- ✘ B. Two end points
- ✘ C. Centre and radius
- ✔ D. Two end points and centre

Question ID : **184122778**

Q.2 For the element shown in below figure V1 = + 20 V, what is the value of V2?



Ans
- ✘ A. +20 V
- ✘ B. +10 V
- ✔ C. −20 V
- ✘ D. −10 V

Question ID : **184122769**

Q.3 Which type of drawing shows how the components are added with their proportion?

Ans
- ✔ A. Layout assembly
- ✘ B. Design assembly
- ✘ C. Projection assembly
- ✘ D. Drawing assembly

Question ID : **184122774**

Q.4 A boolean function is given as F(x,y,z) = ∑(1, 3, 6, 7). What is its equivalent canonical form?

Ans
- ✘ A. F (x,y,z) = ∏ (0, 2 , 3, 5) product of max terms
- ✔ B. F (x,y,z) = ∏ (0, 2 , 4, 5) product of max terms
- ✘ C. F (x,y,z) = ∏ (0, 2 , 4, 5) product of min terms
- ✘ D. F (x,y,z) = ∏ (0, 2 , 4, 5) sum of max terms

Question ID : **184122786**

Q.5 The combination of three J-K flip flops connected in series are capable of:

Ans
- ✘ A. storing one bit data
- ✘ B. storing four bit data
- ✘ C. storing two bit data
- ✔ D. storing three bit data

Question ID : **184122788**

Q.6 The object projection shown in three-dimensional views is known as:

Ans
- ✘ A. perspective
- ✘ B. oblique
- ✘ C. isometric
- ✔ D. orthographic

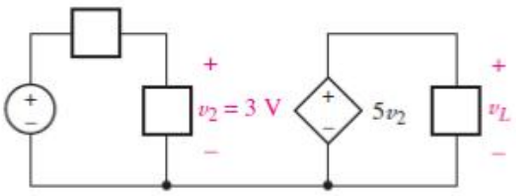
Question ID : **184122775**

Q.7 What is the value of Representation factor (RF) on an isometric scale?

Ans
- ✘ A. 0.815/10
- ✘ B. Sqrt (9/20)
- ✘ C. 0.8165/10
- ✔ D. Sqrt(0.667)

Question ID : **184122776**

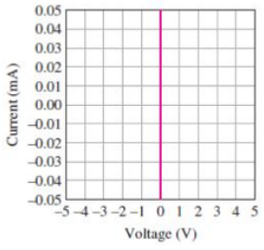
Q.8 What is the value of vL in the below figure?



Ans
- A. 5 V
- B. 1.66 V
- C. 3 V
- D. 15 V

Question ID : **184122770**

Q.9 The voltage and current characteristic plot is shown below. What is the value of the resistance of this element?



Ans
- A. 3 mOhm
- B. 0 mOhm
- C. 2 mOhm
- D. 1 mOhm

Question ID : **184122772**

Q.10 The below symbol in drawing represents:

Ans
- A. first angle projection
- B. second angle projection
- C. front projection
- D. third angle projection

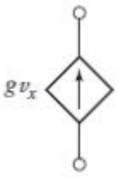
Question ID : **184122777**

Q.11 In the drawing, hidden edges are shown by:

Ans
✗ A. the double lines
✓ B. the dotted lines
✗ C. the solid lines
✗ D. the curve lines

Question ID : **184122780**

Q.12 The below shown source is a:



Ans
✗ A. current controlled voltage source
✓ B. voltage controlled current source
✗ C. voltage controlled voltage source
✗ D. current controlled current source

Question ID : **184122771**

Q.13 Which type of magnetic core is used for high frequency operated circuits?

Ans
✓ A. Ferrite cores
✗ B. Plastic cores
✗ C. Aluminium cores
✗ D. Air cores

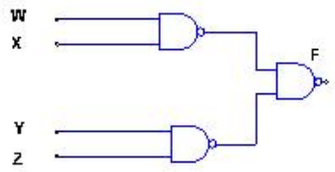
Question ID : **184122782**

Q.14 The hysteresis loop for the material of the core of a transformer should be

Ans
✗ A. tall only
✗ B. short only
✗ C. short and wide
✓ D. tall and narrow

Question ID : **184122785**

Q.15 The output F for the circuit shown below is:



Ans

✗ A. $F = WXYZ$

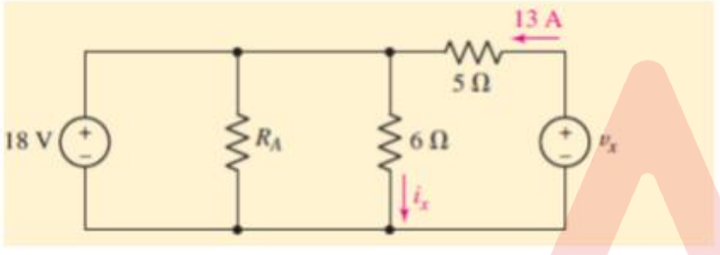
✓ B. $F = WX + YZ$

✗ C. $F = W+X+Y+Z$

✗ D. $F = (W+X)\,(Y+Z)$

Question ID : **184122787**

Q.16 In the below circuit, the number of branches and nodes are:



Ans

✓ A. 5 branches, 3 nodes

✗ B. 3 branches, 5 nodes

✗ C. 3 branches, 3 nodes

✗ D. 5 branches, 5 nodes

Question ID : **184122773**

Q.17 What is the name of the line which passes through the focus and is perpendicular to the directrix?

Ans

✗ A. Conic

✗ B. Vertex

✗ C. Circle

✓ D. Axis

Question ID : **184122779**

Q.18 In an electrical circuit, liquid crystal is used for:

Ans
✗ A. determining temp failure
✓ B. determining potential failure
✗ C. determining gas failure
✗ D. determining gases

Question ID : **184122781**

Q.19 Plastic material is a _____ of electricity.

Ans
✗ A. semi insulator
✓ B. good insulator
✗ C. semi conductor
✗ D. good conductor

Question ID : **184122784**

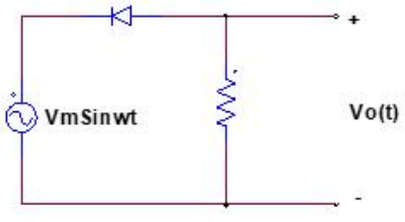
Q.20 Thiourea is an element which is:

Ans
✓ A. Pyroelectric, piezoelectric, ferro electric material
✗ B. Pyro nonelectric, piezoelectric, ferro electric material
✗ C. Pyroelectric, piezoelectric, ferro non electric material
✗ D. Pyroelectric, peizonon-electric, ferro electric material

Question ID : **184122783**

Section : **Discipline3**

Q.1 In the below circuit, the average value of Vo(t) is:



Ans
✗ A. $-Vm$
✗ B. $-Vm/sqrt(2)$
✓ C. $-Vm/\pi$
✗ D. 0

Question ID : **184122792**

Q.2 If a BJT has to work as an amplifier, then it has to work in the:

Ans
✗ A. saturation region
✓ B. active region
✗ C. space region
✗ D. cut-off region

Question ID : **184122790**

Q.3 Which of the following magnetic materials is used for a transformer?

Ans
✓ A. Cold rolled grain-oriented steel
✗ B. Cast steel
✗ C. Hot rolled silicon steel
✗ D. Copper

Question ID : **184122802**

Q.4 A two-way switch is used for controlling:

Ans
✓ A. one bulb from 2 points
✗ B. two bulbs from 2 points
✗ C. one bulb from 1 point
✗ D. multiple bulbs from 2 points

Question ID : **184122800**

Q.5 How many power socket outlets are permitted in a power sub circuit as per IE rule?

Ans
✗ A. 4
✗ B. 3
✗ C. 1
✓ D. 2

Question ID : **184122804**

Q.6 An 8085 microprocessor has _____ address lines.

Ans
✗ A. 8
✗ B. 32
✗ C. 10
✓ D. 16

Question ID : **184122799**

Q.7 Which of the following is called universal gate?

Ans
✗ A. only NOR
✗ B. only NAND
✓ C. NAND, NOR
✗ D. NAND, OR

Question ID : **184122796**

Q.8 The binary equivalent of octal number 627 is:

Ans
✗ A. 111010110
✗ B. 110010110
✓ C. 110010111
✗ D. 011010111

Question ID : **184122794**

Q.9 For transconductance amplifier, input and output resistances are, respectively:

Ans
✓ A. ∞ and ∞
✗ B. ∞ and 0
✗ C. 0 and ∞
✗ D. 0 and 0

Question ID : **184122791**

Q.10 In Boolean algebra A+(B.C)=?

Ans
✗ A. A.(B+C)
✗ B. A.B+A.C
✗ C. A.B+C
✓ D. (A+B).(A+C)

Question ID : **184122797**

Q.11 Multi step core in a transformer is used to:

Ans
✓ A. decrease the cost of copper
✗ B. increase the efficiency
✗ C. decrease the voltage regulation
✗ D. decrease the cost of core

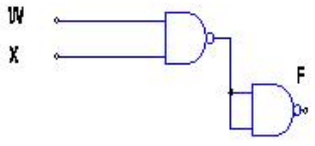
Question ID : **184122805**

Q.12 A byte is a group of:

Ans
✗ A. 16 bits
✗ B. 2 bits
✗ C. 4 bits
✓ D. 8 bits

Question ID : **184122795**

Q.13 The below figure is a _____ gate.



Ans
✗ A. OR
✗ B. NAND
✓ C. AND
✗ D. NOT

Question ID : **184122789**

Q.14 A commonly used material for winding of an electrical machine is:

Ans
✗ A. hard drawn copper
✓ B. enamelled copper
✗ C. aluminium
✗ D. silver

Question ID : **184122801**

Q.15 How many memory locations can be addressed by an 8085 microprocessor?

Ans
✗ A. 128K
✓ B. 64K
✗ C. 32K
✗ D. 16K

Question ID : **184122793**

Q.16 Penstocks in hydro power plant are saved from any damage by:

Ans
✗ A. dam
✗ B. water turbine
✗ C. reservoir
✓ D. surge tank

Question ID : **184122808**

Q.17 Thickness of lamination in a transformer is usually between:

Ans
✗ A. 0.1 mm to 0.2 mm
✓ B. 0.35 mm to 0.5 mm
✗ C. 0.1 mm to 0.35 mm
✗ D. 0.5 mm to 1.2 mm

Question ID : **184122806**

Q.18 _____ is the device having 1 input and N outputs.

Ans
✗ A. Shift register
✗ B. Multiplexer
✓ C. De-multiplexer
✗ D. Counter

Question ID : **184122798**

Q.19 Which of the following power plants has the lowest running cost?

Ans
✗ A. Diesel power plant
✓ B. Hydro power plant
✗ C. Thermal power plant
✗ D. Nuclear power plant

Question ID : **184122807**

Q.20 _____ is the cheapest wiring system.

Ans
✓ A. Cleat
✗ B. Metal sheathed
✗ C. Conduit
✗ D. Casing/Capping

Question ID : **184122803**

Section : **Discipline4**

Q.1 If one of the transformers in $\Delta - \Delta$ bank is disabled, the system can continue to operate at a reduced capacity of:

Ans
- ✗ A. 73.6%
- ✗ B. 66.7%
- ✓ C. 57.7%
- ✗ D. 50%

Question ID : **184122827**

Q.2 Which of the following is a commonly used material in solar cells?

Ans
- ✗ A. Aluminium
- ✗ B. Germanium
- ✓ C. Silicon
- ✗ D. Copper

Question ID : **184122810**

Q.3 An alternator gives output at the standard frequency. This frequency can be decreased by:

Ans
- ✗ A. increasing the field current
- ✓ B. decreasing the speed of the field
- ✗ C. decreasing the field current
- ✗ D. increasing the speed of the field

Question ID : **184122813**

Q.4 A 4 pole 50 Hz synchronous motor runs at:

Ans
- ✗ A. 3000 rpm
- ✓ B. 1500 rpm
- ✗ C. 1440 rpm
- ✗ D. 750 rpm

Question ID : **184122823**

Q.5 The frequency of an alternating current given by $I = 50\sin 157t$ is:

Ans
- ✓ A. 25 Hz
- ✗ B. 78.5 Hz
- ✗ C. 157 Hz
- ✗ D. 50 Hz

Question ID : **184122819**

Q.6 In an R-L-C series circuit resonant frequency is f Hz. If the values of all the components are doubled, then the new resonant frequency is:

Ans

✗ A. f

✓ B. f/2

✗ C. f/4

✗ D. 2f

Question ID : **184122817**

Q.7 In measurement of 3 phase power by the two-wattmeter method of a balanced load, the power factor is given by:

Ans

✗ A. $\cos\left\{\tan^{-1}\left[\sqrt{3}\left(\frac{W_2+W_1}{W_1-W_2}\right)\right]\right\}$

✗ B. $\cos\left\{\tan^{-1}\left[3\left(\frac{W_2-W_1}{W_1+W_2}\right)\right]\right\}$

✓ C. $\cos\left\{\tan^{-1}\left[\sqrt{3}\left(\frac{W_2-W_1}{W_1+W_2}\right)\right]\right\}$

✗ D. $\cos\left\{\tan^{-1}\left(\frac{W_2+W_1}{W_1-W_2}\right)\right\}$

Question ID : **184122820**

Q.8 The oldest nuclear power plant installed in India is:

Ans

✗ A. Kakrapar (Gujrat)

✗ B. Kalpakkam (Tamil Nadu)

✗ C. Kota (Rajasthan)

✓ D. Tarapur (Maharashtra)

Question ID : **184122809**

Q.9 For calculating Norton's current in Norton's theorem, load terminals:

Ans

✗ A. remain connected with the load

✓ B. are short circuited

✗ C. are open circuited

✗ D. are interchanged

Question ID : **184122815**

Q.10 Holding current I_H in a thyristor is:

Ans
- ✗ A. equal to latching current I_L
- ✗ B. more than latching current I_L
- ✓ C. less than latching current I_L
- ✗ D. equal to zero

Question ID : **184122828**

Q.11 In a transformer, Buchholz relay is located in the:

Ans
- ✗ A. transformer tank
- ✓ B. pipe connecting the transformer tank and the conservator tank
- ✗ C. circuit breaker
- ✗ D. conservator tank

Question ID : **184122811**

Q.12 As per IE rule, a supplier is not permitted to vary the declared frequency of AC by more than:

Ans
- ✓ A. 3%
- ✗ B. 1%
- ✗ C. 10%
- ✗ D. 5%

Question ID : **184122812**

Q.13 The effect of increased rotor resistance in an induction motor on torque and speed is that the:

Ans
- ✗ A. max torque occurs at higher speed
- ✓ B. max torque occurs at lower speed
- ✗ C. max torque occurs at the same speed
- ✗ D. max torque occurs at synchronous speed

Question ID : **184122826**

Q.14 Total reactance will be zero for an induction coil having capacitance when:

Ans
- ✗ A. $LC = \omega^2$
- ✓ B. $LC = 1/\omega^2$
- ✗ C. $L = C$
- ✗ D. $LC = 1$

Question ID : **184122816**

Q.15 A current source of 5 A with 2 ohms parallel resistance is equivalent to a voltage source of _____ volts with 2 ohms series resistance.

Ans
- ✔ A. 10
- ✘ B. 2
- ✘ C. 2.5
- ✘ D. 5

Question ID : **184122818**

Q.16 In an alternator at zero power factor leading, the armature reaction is:

Ans
- ✘ A. no affect
- ✘ B. demagnetising
- ✘ C. distorting
- ✔ D. magnetising

Question ID : **184122824**

Q.17 In maximum power transfer theorem, load R_L will draw maximum power when:

Ans
- ✔ A. $R_L = R_{Th}$
- ✘ B. $R_L > R_{Th}$
- ✘ C. $2R_L = R_{Th}$
- ✘ D. $R_L < R_{Th}$

Question ID : **184122814**

Q.18 In a transformer, iron losses occur in:

Ans
- ✔ A. core
- ✘ B. oil
- ✘ C. bushings
- ✘ D. winding

Question ID : **184122822**

Q.19 Series-parallel speed control method used in traction system gives a speed range of about:

Ans
- ✘ A. 1 : 5
- ✔ B. 1 : 4
- ✘ C. 1 : 2
- ✘ D. 1 : 3

Question ID : **184122825**

Q.20 _____ is used for finding the direction of a DC motor rotation.

Ans
✗ A. Fleming's right-hand rule
✗ B. Faraday's law
✗ C. Newton's law
✓ D. Fleming's left-hand rule

Question ID : **184122821**

Section : **Discipline5**

Q.1 _____ is a passive transducer.

Ans
✗ A. Tachogenerator
✗ B. Solar cell
✓ C. LVDT
✗ D. Thermocouple

Question ID : **184122835**

Q.2 In a series inverter circuit, the condition for an underdamped in an oscillator is:

Ans
✗ A. $R^2 > L/4C$
✗ B. $R^2 = 4L/C$
✗ C. $R^2 > 4L/C$
✓ D. $R^2 < 4L/C$

Question ID : **184122834**

Q.3 _____ is the device that has the characteristics of both Bipolar Junction Transistor and MOSFET.

Ans
✗ A. FCT
✗ B. GTO
✗ C. MCT
✓ D. IGBT

Question ID : **184122831**

Q.4 The expression for resistance R of a thermistor at a temperature T can be given by:

Ans

✗ A. $R = -\alpha e^{\beta/T}$

✓ B. $R = \alpha e^{\beta/T}$

✗ C. $R = \alpha e^{-\beta/T}$

✗ D. $R = \alpha e^{\beta T}$

Question ID : **184122841**

Q.5 For an SCR, $\frac{di}{dt}$ protection is achieved by the use of:

Ans

✗ A. R-L in series with SCR

✓ B. L in series with SCR

✗ C. R-C across SCR

✗ D. R in series with SCR

Question ID : **184122833**

Q.6 For a medium transmission line, constant A is:

Ans

✗ A. equal to C

✓ B. equal to D

✗ C. equal to B

✗ D. equal to B and C

Question ID : **184122847**

Q.7 The relationship between α and β parameters of a transistor is given by:

Ans

✓ A. $\alpha = \frac{\beta}{1+\beta}$

✗ B. $\alpha = \frac{\beta}{1-\beta}$

✗ C. $\alpha = \frac{1+\beta}{\beta}$

✗ D. $\alpha = \frac{1-\beta}{\beta}$

Question ID : **184122829**

Q.8 The maximum value of power factor is:

Ans
✔ A. 1
✘ B. 100
✘ C. 10
✘ D. 0.1

Question ID : **184122843**

Q.9 A three phase, four wire system is used in:

Ans
✘ A. secondary transmission
✘ B. primary transmission
✔ C. secondary distribution
✘ D. primary distribution

Question ID : **184122842**

Q.10 33 kV is suitable for transmission of power for the distance of:

Ans
✔ A. 30-60 km
✘ B. 100-200 km
✘ C. 60-100 km
✘ D. 15-30 km

Question ID : **184122844**

Q.11 Output impedance of an ideal OP-AMP is:

Ans
✘ A. infinite
✘ B. 50
✔ C. zero
✘ D. 5000

Question ID : **184122836**

Q.12 Stringing chart is used for:

Ans
✘ A. finding the distance between towers
✔ B. finding the sag
✘ C. the design of tower
✘ D. the design of insulator string

Question ID : **184122846**

Q.13 For measuring 3 phase power by the 2 wattmeter method, if one of the two wattmeters indicates zero reading, then load power factor is:

Ans

✗ A. zero

✗ B. 0.75

✓ C. 0.5

✗ D. unity

Question ID : **184122840**

Q.14 For a lossless transmission line, the surge impedance is given by:

Ans

✓ A. $\sqrt{L/C}$

✗ B. $\sqrt{C/L}$

✗ C. $\sqrt{1/LC}$

✗ D. $\sqrt{LC}$

Question ID : **184122848**

Q.15 The forbidden energy gap of silicon is:

Ans

✗ A. 1.33 eV

✓ B. 1.1 eV

✗ C. 1.72 eV

✗ D. 0.7 eV

Question ID : **184122830**

Q.16 In CRO the signal to be observed on the screen is applied across:

Ans

✗ A. X-plates

✗ B. accelerating anode

✓ C. Y-plates

✗ D. focusing anode

Question ID : **184122837**

Q.17 The steel wire in an ACSR bundle is used to:

Ans
✗ A. compensate for skin effect
✗ B. reduce inductance
✗ C. provide extra inductance
✓ D. provide additional mechanical strength

Question ID : **184122845**

Q.18 In a PMMC instrument, the deflecting torque is proportional to:

Ans
✗ A. I^3
✗ B. I^2
✗ C. $\sqrt{I}$
✓ D. I

Question ID : **184122838**

Q.19 For a semiconductor strain gauge, the value of gauge factor is:

Ans
✗ A. 100
✗ B. 2
✗ C. 190
✓ D. 140

Question ID : **184122839**

Q.20 Direct coupled amplifiers are used to amplify which of the following?

Ans
✗ A. Very high frequency signals
✗ B. Audio frequency signals
✓ C. Very low frequency signals
✗ D. RF signals

Question ID : **184122832**