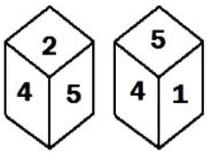
DSSSB AE

Previous Year Paper
(Electrical)
20 June 2022

Test Date	20/06/2022
Test Time	8:30 AM - 10:30 AM
Subject	Assistant Engineer (Electrical)

Section : Mental Ability

Q.1 Two different positions of the same dice are shown. the six faces of which are numbered from 1 to 6. Select the number that will be on the face opposite to the one showing '1'.



Ans
✗ A. 4
✗ B. 3
✓ C. 2
✗ D. 6

Question ID : **10343511645**

Q.2 A statement is followed by two courses of action numbered I and II. Assuming everything in the statement to be true, decide which of the suggested courses of action (a decision to be taken for follow up /improvement in regard to the problem) logically follow(s) for pursuing:
Statement:
Some residents of the housing society have complained of water leakage from the ceiling of their apartments. As per the norms of the housing society, any maintenance exceeding ninety thousand rupees is to be bear by the apartment owners.
Courses of Action:
I. The society management committee should inquire about the tentative expenditure on the repairing of the ceilings of the apartments for which such complaints have been reported.
II. The apartment owners should be asked to pay the entire repairing amount by themselves.

Ans
✗ A. Only II follows
✗ B. Both I and II follow
✗ C. Neither I nor II follows
✓ D. Only I follows

Question ID : **10343511642**

Q.3 What approximate value should come in place of the question mark (?) in the following expression?
10.003 + 15.008 ÷ 2.998 × 4.001 + 35.9929 ÷ 17.982 = ?

Ans
✗ A. 28
✓ B. 32
✗ C. 40
✗ D. 16

Question ID : **10343511648**

Q.4 Which two signs should be interchanged to make the given equation correct?
6 + 17 × 15 ÷ 3 − 34 = 73

Ans
✗ A. × and −
✗ B. + and −
✗ C. × and ÷
✓ D. + and ×

Question ID : **10343511649**

Q.5 Pointing to the photograph of a boy, Gayatri said 'he is my mother-in-law's daughter's only brother's son'. How is Gayatri's husband related to the boy?

Ans
✓ A. Father
✗ B. Maternal uncle
✗ C. Paternal uncle
✗ D. Son

Question ID : **10343511637**

Q.6 Select the correct mirror image of the given combination when the mirror is placed at 'PQ' as shown below.

Ans
✗ A. 
✓ B. 
✗ C. 
✗ D. 

Question ID : **10343511644**

Q.7 Three of the following four number triads are alike in some manner and one is different. Identify the one which is different.

Ans
✗ A. 11 : 101 : 143

✗ B. 12 : 110 : 156

✓ C. 8 : 76 : 102

✗ D. 9 : 83 : 117

Question ID : **10343511647**

Q.8 P, Q, R, S, T and U are six students of a class. They appear in a class test which has maximum marks of 100. Q scores 60%, P scores 10 marks less than R. U scores 20 marks more than P. R and Q score equal marks. T scores the lowest marks. S scores 35 marks more than T and 5 marks more than U. Which two persons score more marks than R?

Ans
✗ A. P and U

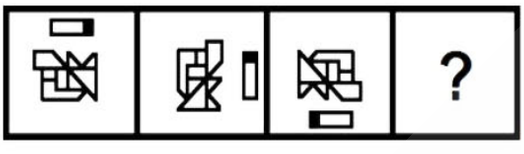
✗ B. S and P

✗ C. U and Q

✓ D. U and S

Question ID : **10343511633**

Q.9 Select the figure that will replace the question mark (?) in the following figure series.



Ans

✓ A 

✗ B. 

✗ C. 

✗ D. 

Question ID : **10343511643**

Q.10 Six boxes numbered 1 to 6 are kept in a rack one above the other; but not necessarily in the same order. Only two boxes are kept above box 1. Box 2 is kept just above box 5. One box is kept between box 4 and box 6. Box 3 is kept at the top. Four boxes are kept between box 3 and box 5. Box 4 is not adjacent to box 3. Which box is kept at the second place from the top?

Ans
✗ A. 2
✗ B. 4
✓ C. 6
✗ D. 5

Question ID : **10343511631**

Q.11 Select the letter cluster that will replace the question mark (?) in the following series.
MQD, JNC, GKB, DHA, ?

Ans
✗ A. AEY
✗ B. ZEZ
✗ C. ADZ
✓ D. AEZ

Question ID : **10343511634**

Q.12 Select the option that is related to the third term in the same way as the second term is related to the first term.
SLW : XQB : : FAX : _____

Ans
✗ A. KEC
✗ B. LFD
✗ C. KGB
✓ D. KFC

Question ID : **10343511639**

Q.13 Three of the following four letter-clusters are alike in some manner and one is different. Identify the one which is different.

Ans
✗ A. SWAEI
✗ B. BFJNR
✗ C. MQUYC
✓ D. VZDKM

Question ID : **10343511640**

Q.14 If A # B means 'A is the daughter of B'
A < B means 'A is the wife of B'
A = B means 'A is the son of B'
If J # C < H = T < K = R, then how is H related to R?

Ans
✗ A. Brother-in-law
✗ B. Son-in-law
✗ C. Maternal grandson
✓ D. Paternal grandson

Question ID : **10343511638**

Q.15 Which number in the following series is wrong?
8, 4, 4, 6, 12, 30, 90, 310

Ans
✗ A. 30
✗ B. 12
✗ C. 90
✓ D. 310

Question ID : **10343511646**

Q.16 In a code language, CINEMA is written as 13-18-24-26-14-22, how will FLOWER be written in that language?

Ans
✓ A. 12-15-21-9-22-4
✗ B. 12-21-15-9-22-23
✗ C. 12-14-21-18-22-4
✗ D. 12-15-22-9-23-4

Question ID : **10343511635**

Q.17 Sangeeta is going towards the east, then she turns 90 degrees left and walks a few meters, then she again turns 90 degrees left and walks a few metres. In which direction is she going now?

Ans
✓ A. West
✗ B. South
✗ C. East
✗ D. North

Question ID : **10343511636**

Q.18 Three of the following four word-pairs are alike in some manner and one is different. Identify the one which is different.

Ans
✗ A. Cataract: Eyes
✗ B. Arthritis : Joints
✓ C. Squint : Nose
✗ D. Psoriasis : Skin

Question ID : **10343511641**

Q.19 Three statements are given, followed by two conclusions numbered I and II. Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.
Statement :
All wires are lights.
All lights are bulbs.
All bulbs are computers.
Conclusions:
I. Some computers are wires.
II. All lights are computers.

Ans
✗ A. Neither conclusion I nor II follows
✗ B. Only Conclusion II follows
✗ C. Only Conclusion I follows
✓ D. Both conclusions I and II follows

Question ID : 10343511632

Q.20 Among five friends, Vineeta is elder than Jonita. Pratha is younger than Jonita. Vedangi is elder than Samya. Vineeta is younger than Samya. Who is the eldest among all?

Ans
✗ A. Jonita
✗ B. Samya
✗ C. Pratha
✓ D. Vedangi

Question ID : 10343511630

Section : General Awareness

Q.1 Higgs boson is often called the _____.

Ans
✗ A. Life particle
✓ B. God particle
✗ C. Holy particle
✗ D. Particle of divinity

Question ID : 10343511667

Q.2 In which of the following years the Disaster Management Act was passed?

Ans
✓ A. 2005
✗ B. 2003
✗ C. 2004
✗ D. 2001

Question ID : 10343511663

Q.3 In which place did Sarnath Lord preach his first sermon sacred as Maha Dharm Chakra Parivartan?

Ans
- ✓ A. Sarnath
- ✗ B. Namdroling
- ✗ C. Chaukhandi
- ✗ D. Yiga Choeling

Question ID : **10343511658**

Q.4 Which of the following pilgrimage sites in Pakistan connects the Kartarpur Sahib Corridor in India?

Ans
- ✗ A. Gurudwara Panja Sahib
- ✗ B. Gurudwara Dera Sahib
- ✗ C. Gurudwara Rori Sahib
- ✓ D. Gurudwara Darbar Sahib

Question ID : **10343511657**

Q.5 Conversion of a substance from the solid to the gaseous state without its becoming liquid is called _____.

Ans
- ✗ A. Gasification
- ✓ B. Sublimation
- ✗ C. Transferal
- ✗ D. Colligation

Question ID : **10343511668**

Q.6 In which of the following years the Sikh Gurudwaras Act was passed?

Ans
- ✗ A. 1926
- ✓ B. 1925
- ✗ C. 1923
- ✗ D. 1924

Question ID : **10343511655**

Q.7 Which of the following ISRO chairman was replaced by scientist S. Somanath in the month of January 2022?

Ans
- ✗ A. G. Madhavan
- ✗ B. K. Radhakrishnan
- ✗ C. A. S. Kiran Kumar
- ✓ D. Kailasavadivoo Sivan

Question ID : **10343511650**

Q.8 Google renamed itself _____ in 2015, making Google a subsidiary.

Ans
- ✗ A. Meta
- ✓ B. Alphabet
- ✗ C. Script
- ✗ D. Omega

Question ID : **10343511651**

Q.9 Punjab and Sind Bank was incorporated in _____.

Ans
- ✗ A. 1910
- ✓ B. 1908
- ✗ C. 1911
- ✗ D. 1909

Question ID : **10343511662**

Q.10 As per the census 2011, what was the literacy rate of females of India?

Ans
- ✗ A. 28.96%
- ✗ B. 26.36%
- ✗ C. 33.66%
- ✓ D. 65.46%

Question ID : **10343511665**

Q.11 In which of the following years did Lata Mangeshkar receive the Bharat Ratna award?

Ans
- ✗ A. 2003
- ✓ B. 2001
- ✗ C. 2004
- ✗ D. 2002

Question ID : **10343511660**

Q.12 Who was the first Deputy Speaker of Lok Sabha?

Ans
- ✗ A. Santosh Kumar Gangwar
- ✓ B. M. Ananthasayanam Ayyangar
- ✗ C. Utpal Kumar Singh
- ✗ D. G. V. Mavalankar

Question ID : **10343511669**

Q.13 Which of the following was not one of the three ruling houses of Tamil India?

Ans
- ✗ A. Cholas
- ✗ B. Pandyas
- ✓ C. Kadambas
- ✗ D. Cheras

Question ID : **10343511656**

Q.14 Mahavir Jayanti is one of the most important festivals in Jainism, and it celebrates the birth anniversary of the _____ Tirthankara Mahavir.

Ans
- ✔ A. 24th
- ✗ B. 30th
- ✗ C. 28th
- ✗ D. 26th

Question ID : **10343511661**

Q.15 Which of the following states is known for the Sattriya dance?

Ans
- ✗ A. Goa
- ✔ B. Assam
- ✗ C. Rajasthan
- ✗ D. Karnataka

Question ID : **10343511659**

Q.16 Haj Committee Act was passed in the year _____.

Ans
- ✗ A. 2001
- ✗ B. 2004
- ✔ C. 2002
- ✗ D. 2003

Question ID : **10343511653**

Q.17 As of January 2022, which of the following is not a known Cryptocurrencies?

Ans
- ✗ A. Litecoin
- ✗ B. Ethereum
- ✔ C. Graffiti
- ✗ D. Polkadot

Question ID : **10343511652**

Q.18 Mangrove forest of Bhitarkanika is in _____

Ans
- ✗ A. West Bengal
- ✔ B. Odisha
- ✗ C. Rajasthan
- ✗ D. Chhattisgarh

Question ID : **10343511664**

Q.19 What is the name of the scheme to Preserve Rich Heritage of Minority Communities of India under the Overall Concept of Indian Culture?

Ans
- ✔ A. Hamari Dharohar
- ✗ B. Alpsankhyak Heritage
- ✗ C. Minority Treasure
- ✗ D. Sanskriti Bachao

Question ID : **10343511654**

Q.20 What is the name of the project launched by Prime Minister, Shri Narendra Modi in which bridges will be built for safe and seamless travel on National Highways?

Ans
- ✔ A. Setu Bharatam
- ✗ B. Laxman Rekha
- ✗ C. Ram Setu Project
- ✗ D. Connecting India

Question ID : **10343511666**

Section : Arithmetic Ability

Q.1 A 36 m long wire of radius one mm is melted and recast into a sphere. What is the surface area (in cm^2) of the sphere?

Ans
- ✗ A. 64π
- ✗ B. 81π
- ✗ C. 100π
- ✔ D. 36π

Question ID : **10343511685**

Q.2 In 2021-2022, the foreign exchange reserves of the country increase over 2020-21 by the same percentage as in 2017-18 over 2014-15, then what would be the foreign exchange reserves (in ₹ crores) in 2021-22?

Ans
- ✗ A. 9520.5
- ✗ B. 9350
- ✗ C. 9605
- ✔ D. 9562.5

Question ID : **10343511687**

Q.3 Study the following table which shows the revenue and profit percent of a company over four years (2018-2021) and answer the question:

Year	Revenue (in ₹ crores)	Profit percent
2018	174	45
2019	213	42
2020	217	55
2021	272	60

Profit = Revenue – Expenditure

$$\text{Profit Percent} = \frac{\text{Revenue} - \text{Expenditure}}{\text{Expenditure}} \times 100$$

The expenditure of the company in 2021 is what percent of the total revenue in 2019 and 2020 (correct to one decimal place)?

Ans
✗ A. 41.9%
✗ B. 43.9%
✗ C. 37.2%
✓ D. 39.5%

Question ID : **10343511688**

Q.4 The ratio of the present ages of Anoop and his wife is 10 : 9. After 12 years from now, the ratio of their ages will be 13 : 12. What will be the sum of their ages (in years) after 6 years from now?

Ans
✗ A. 76
✗ B. 82
✗ C. 94
✓ D. 88

Question ID : **10343511677**

Q.5 A field is in the shape of a rhombus whose perimeter is 212 m. One of its diagonal is 90 m. What is the area (in m^2) of the field?

Ans
✗ A. 2340
✓ B. 2520
✗ C. 2160
✗ D. 2250

Question ID : **10343511683**

Q.6 The average profit (per year) of the company in 2019 and 2020 is approximately what percent less than the average expenditure (per year) in 2018 and 2020?

Ans
✗ A. 52.6%
✓ B. 46.2%
✗ C. 53.8%
✗ D. 45.4%

Question ID : **10343511689**

Q.7 The value of $(3\frac{1}{5} \div 4\frac{1}{2} \text{ of } 5\frac{1}{3}) \div \frac{3}{5} - 2\frac{2}{3} \div \frac{5}{9} \text{ of } 1\frac{1}{5} \times \frac{1}{8} + \frac{1}{4} \div \frac{3}{5}$ is:

Ans
- ✗ A. $\frac{10}{9}$
- ✓ B. $\frac{5}{36}$
- ✗ C. $\frac{4}{9}$
- ✗ D. $\frac{7}{12}$

Question ID : **10343511670**

Q.8 Income of A is 48 % more than the income of B whose income is 40% less than that of C. A's income is what percent more than the average income of B and C?

Ans
- ✗ A. 10.5%
- ✗ B. 12%
- ✓ C. 11%
- ✗ D. 12.5%

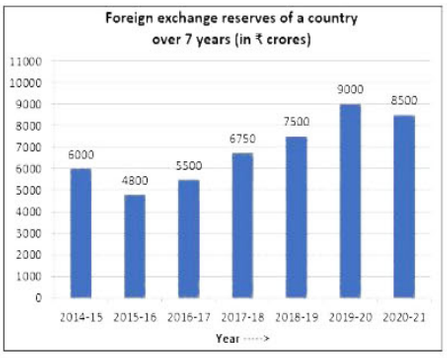
Question ID : **10343511675**

Q.9 When 3871, 5627 and 8700 are divided by the greatest number p, the remainder in each case is q. What is the value of (5p- 3q)?

Ans
- ✓ A. 1118
- ✗ B. 1084
- ✗ C. 1108
- ✗ D. 1024

Question ID : **10343511672**

Q.10 Study the following bar graph and answer the question:



Compared to the lowest foreign exchange reserves of the country in any one of the given years, the foreign exchange reserves in the year 2018-19 increased by:

Ans
✗ A. 52%

✗ B. $58\frac{1}{3}\%$

✓ C. $56\frac{1}{4}\%$

✗ D. 49%

Question ID : **10343511686**

Q.11 The average daily income of Rishi and his 9 friends is ₹520. If the daily income of Rishi is ₹150 more than the average daily income of his 9 friends, then what is the daily income (in ₹) of Rishi?

Ans
✗ A. 650

✗ B. 640

✓ C. 655

✗ D. 635

Question ID : **10343511682**

Q.12 The value of $\frac{0.924 \times 0.752 + 0.462 \times 0.496}{0.055 \times 2.1 + 3.5 \times 0.167}$ is:

Ans
✗ A. 0.44

✗ B. 1.68

✗ C. 1.43

✓ D. 1.32

Question ID : **10343511671**

Q.13 Pipe A can fill a tank in 25 hours. B can fill 40% part of the tank in 8 hours. Both are opened for 5 hours and then B is closed. Pipe A alone will fill the remaining part of the tank in _____.

Ans

✔ A. $13\frac{3}{4}$ hours

✗ B. 15 hours

✗ C. 12 hours

✗ D. $14\frac{1}{2}$ hours

Question ID : **10343511678**

Q.14 A and B can complete a work in 75 days and 60 days, respectively. They started the work together, but A left after some days. B alone completed the remaining work in 33 days. For how many days did A and B work together?

Ans

✗ A. 10

✔ B. 15

✗ C. 12

✗ D. 17

Question ID : **10343511679**

Q.15 A shopkeeper bought articles A and B for a total of ₹2210. He sold A at a gain of 15% and sold B at a loss of 20%. The selling price of A is ₹104 more than that of B. What was the difference (in ₹) between the cost prices of A and B?

Ans

✗ A. 250

✗ B. 275

✔ C. 290

✗ D. 245

Question ID : **10343511676**

Q.16 The value of $39 \div 52 \times 3 - \{41 - (17 - 21) \times 2\} \div 14 + 9 \div 3$ of 4 is :

Ans

✗ A. 0

✔ B. $-\frac{1}{2}$

✗ C. 2

✗ D. $\frac{1}{2}$

Question ID : **10343511673**

Q.17 3 वर्षों के लिए 8% प्रति वर्ष साधारण ब्याज पर निवेश की गई राशि का मिश्रधन, 12 वर्षों के लिए 12% प्रति वर्ष की दर से समान राशि के साधारण ब्याज से ₹1660 कम है। वह राशि (₹ में) कितनी है?

Ans
✗ A. 8400
✓ B. 8300
✗ C. 8500
✗ D. 8200

Question ID : **10343511681**

Q.18 The time taken by a boat to go a certain distance upstream is two-third of the time taken by it to go three times the same distance downstream. The speed of the stream is 5 km/hr. How much time (in hours) will the boat take to go 35 km downstream and 25 km upstream?

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

Question ID : **10343511680**

Q.19 A sum of ₹ x is divided between A, B and C in the ratio $\frac{2}{5} : \frac{1}{2} : \frac{3}{4}$. What is the value of x, if the difference between the shares of A and C is ₹ 868?

Ans
✓ A. 4092
✗ B. 3720
✗ C. 4340
✗ D. 3844

Question ID : **10343511674**

Q.20 The sides of a triangular park are 132 m, 224 m and 260 m. Its area is equal to the area of a rectangular garden whose sides are in ratio 21 : 11. The perimeter (in m) of the rectangular garden is

Ans
✗ A. 462
✗ B. 396
✓ C. 512
✗ D. 528

Question ID : **10343511684**

Section : General English

Q.1 Select the most appropriate option to fill in the blank.

Kavya got up early and _____ so much noise that she woke everybody up.

Ans
✗ A. has made
✗ B. make
✗ C. makes
✓ D. made

Question ID : **10343511693**

Q.2 Identify the adverb in the following sentence.

He condition will certainly worsen if you do not take her to the hospital.

Ans
✗ A. condition
✓ B. certainly
✗ C. worsen
✗ D. take

Question ID : **10343511692**

Q.3 Select the most appropriate option to fill in the blank.

The government has decided to give adequate _____ to the farmers for loss of crop.

Ans
✓ A. compensation
✗ B. penalty
✗ C. damage
✗ D. profit

Question ID : **10343511703**

Q.4 Select the most appropriate option to fill in the blank.

During the pandemic, there was a reduction _____ the number of road accidents.

Ans
✓ A. in
✗ B. at
✗ C. to
✗ D. between

Question ID : **10343511691**

Q.5 Select the most appropriate option to fill in the blank.

A war has been going on _____ Russia and Ukraine.

Ans
✓ A. between
✗ B. among
✗ C. besides
✗ D. along with

Question ID : **10343511690**

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

ZEALOUS

Ans
✔ A. indifferent
✗ B. passionate
✗ C. enthusiastic
✗ D. pathetic

Question ID : **10343511697**

Q.7 Select the most appropriate option to fill in the blanks in the given two sentences.

Dr. Singh has a deep _____ of the human character.
Mangal Pandey could _____ the Indian soldiers against the use of new bullets.

Ans
✔ A. insight; incite
✗ B. incite; incite
✗ C. incite; insight
✗ D. insight; insight

Question ID : **10343511698**

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

ASSEMBLE

Ans
✔ A. collect
✗ B. distribute
✗ C. scatter
✗ D. divide

Question ID : **10343511695**

Q.9 Select the most appropriate idiom to fill in the blank.

The Managing Director _____ for being late to office again and again.

Ans
✗ A. kept pace with him
✗ B. picked a quarrel with him
✔ C. took him to task
✗ D. took his advantage

Question ID : **10343511699**

Q.10 Select the sentence part which has an error in spelling. If there is no error, select 'No error'.

I was pleasantly surprised to hear his explaination.

Ans
✗ A. No error
✗ B. I was pleasantly
✔ C. his explaination
✗ D. surprised to hear

Question ID : **10343511700**

Q.11 Select the sentence part which has an error in spelling. If there is no error, select 'No error'.

A quarter of US jobs will be severely disrupted as artificial intelligence accelerates the automation of existing work.

Ans
✗ A. No error
✓ B. as artificial intelligence accelerates
✗ C. A quarter of US jobs will be severely disrupted
✗ D. the automation of existing work.

Question ID : **10343511701**

Q.12 Select the sentence which is meaningful and grammatically correct.

Ans
✓ A. Sunita cleans our house everyday in the morning.
✗ B. In the morning our house cleans Sunita everyday.
✗ C. Our house Sunita cleans morning in the everyday.
✗ D. Everyday in the morning cleans our house Sunita.

Question ID : **10343511702**

Q.13 Select the most appropriate option to fill in the blank.

I always _____ the newspaper in the evening as my mornings are busy in other things.

Ans
✓ A. read
✗ B. am reading
✗ C. had read
✗ D. was reading

Question ID : **10343511694**

Q.14 Select the most appropriate synonym of the given word.

WANDER

Ans
✓ A. roam
✗ B. escape
✗ C. run
✗ D. stay

Question ID : **10343511696**

Q.15 Select the most appropriate option to fill in the blank.

When the function was over, the dais was left with crushed flowers _____ all over.

Ans
✓ A. Scattered
✗ B. Covered
✗ C. Distributed
✗ D. Planted

Question ID : **10343511704**

Comprehension:

Read the following passage and answer the questions given after it.
Planting roadside hedges, rather than just relying on trees, can most effectively reduce pollution exposure from cars in near - road environments.
Researchers from University of Surrey in the UK looked at how three types of road-side green infrastructure - trees, hedges, and a combination of trees with hedges and shrubs - affected the concentration levels of air pollution.
The study, published in the journal Atmospheric Environment, used six roadside locations in the UK, as test sites where the green infrastructure was between one to two metres away from the road.
The researchers found that roadsides that only had hedges were the most effective at reducing pollution exposure, cutting black carbon by up to 63 per cent.
The maximum reduction in concentrations was observed when the winds were parallel to the road. The elemental composition of particles indicated an appreciable reduction in harmful heavy metals originating from traffic behind the vegetation.
The hedges only - and a combination of hedges and trees - emerged as the most effective green infrastructure in improving air quality.
Roadsides with only trees showed no positive influence on pollution reduction at breathing height, usually between 1.5 and 1.7 m, as the tree canopy was too high to provide a barrier / filtering effect for road-level tailpipe emissions.
'Many millions of people across the world live in urban areas where the pollution levels are also the highest. The best way to tackle pollution is to control it at the source," said Professor Prashant Kumar, from the University of Surrey.
However, reducing exposure to traffic emissions in near-road environments has a big part to play in improving health and well-being for city-dwellers.
'This study provides evidence to show the important role strategically placed roadside hedges can play in reducing pollution exposure for pedestrians, cyclists and people who live close to roads,' said Kumar.

SubQuestion No : 16

Q.16 Which of the following is NOT true according to the passage?

Ans

✗ A. Trees alone cannot reduce pollution caused by traffic.

✗ B. The roadside hedges can cut black carbon by up to 63 per cent.

✗ C. Roadside hedges are ideal for reducing pollution exposure for pedestrians, cyclists, etc.

✓ D. Roadsides with high trees have maximum reduction in pollution level at breathing level.

Question ID : **10343511710**

Comprehension:

Read the following passage and answer the questions given after it.
Planting roadside hedges, rather than just relying on trees, can most effectively reduce pollution exposure from cars in near - road environments.
Researchers from University of Surrey in the UK looked at how three types of road-side green infrastructure - trees, hedges, and a combination of trees with hedges and shrubs - affected the concentration levels of air pollution.
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'This study provides evidence to show the important role strategically placed roadside hedges can play in reducing pollution exposure for pedestrians, cyclists and people who live close to roads,' said Kumar.

SubQuestion No : 17

Q.17 Which locations were chosen for the study?

Ans

✗ A. areas with hedges and shrubs

✗ B. roadsides with only trees

✓ C. roadsides with green infrastructure

✗ D. areas with highest level of pollution

Question ID : **10343511708**

Comprehension:

Read the following passage and answer the questions given after it.
Planting roadside hedges, rather than just relying on trees, can most effectively reduce pollution exposure from cars in near - road environments.
Researchers from University of Surrey in the UK looked at how three types of road-side green infrastructure - trees, hedges, and a combination of trees with hedges and shrubs - affected the concentration levels of air pollution.
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'This study provides evidence to show the important role strategically placed roadside hedges can play in reducing pollution exposure for pedestrians, cyclists and people who live close to roads,' said Kumar.

SubQuestion No : 18

Q.18 The main theme of the passage is:

Ans

✔ A. the effect of roadside green infrastructure on pollution level

✗ B. reducing pollution in near-road environment

✗ C. reducing emission level of cars

✗ D. planting trees and hedges on the roadside

Question ID : **10343511706**

Comprehension:

Read the following passage and answer the questions given after it.
Planting roadside hedges, rather than just relying on trees, can most effectively reduce pollution exposure from cars in near - road environments.
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However, reducing exposure to traffic emissions in near-road environments has a big part to play in improving health and well-being for city-dwellers.
'This study provides evidence to show the important role strategically placed roadside hedges can play in reducing pollution exposure for pedestrians, cyclists and people who live close to roads,' said Kumar.

SubQuestion No : 19

Q.19 Which of the following is not a part of the roadside green infrastructure?

Ans

✔ A. Herbs

✗ B. Hedges

✗ C. Trees

✗ D. Shrubs

Question ID : **10343511707**

Comprehension:

Read the following passage and answer the questions given after it.
Planting roadside hedges, rather than just relying on trees, can most effectively reduce pollution exposure from cars in near - road environments.
Researchers from University of Surrey in the UK looked at how three types of road-side green infrastructure - trees, hedges, and a combination of trees with hedges and shrubs - affected the concentration levels of air pollution.
The study, published in the journal Atmospheric Environment, used six roadside locations in the UK, as test sites where the green infrastructure was between one to two metres away from the road.
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'This study provides evidence to show the important role strategically placed roadside hedges can play in reducing pollution exposure for pedestrians, cyclists and people who live close to roads,' said Kumar.

SubQuestion No : 20

Q.20 **Which of the following was most effective in reducing pollution exposure at the breathing level?**

Ans
✗ A. roadsides with trees and hedges
✓ B. roadsides with hedges
✗ C. roadsides with shrubs
✗ D. roadsides with only trees

Question ID : **10343511709**

Section : General Hindi

Q.1 **'अपने विरुद्ध होने वाले अत्याचार का सभी को यथा शक्ति विरोध करना चाहिए।' वाक्य में यथा शक्ति शब्द उदाहरण है-**

Ans
✗ A. समयवाचक क्रिया विशेषण का
✗ B. स्थानवाचक क्रिया विशेषण का
✗ C. परिमाणवाचक क्रिया विशेषण का
✓ D. रीतिवाचक क्रिया विशेषण का

Question ID : **10343511713**

Q.2 **एकैक' में संधि है-**

Ans
✗ A. अयादि संधि
✗ B. गुण संधि
✓ C. वृद्धि संधि
✗ D. यण् संधि

Question ID : **10343511714**

Q.3 निम्न में से संयुक्त वाक्य है-

Ans
✗ A. कक्षा ऐसी जगह नहीं जहाँ छात्र खेलें।
✗ B. दंड से बचने के लिए वह भाग गया।
✗ C. बच्चा होने पर भी वह था चतुर।
✓ D. देर मत करो, नहीं तो गाड़ी छूट जाएगी।

Question ID : 10343511722

Q.4 निम्न में से सरस्वती का पर्याय नहीं है-

Ans
✗ A. गिरा
✗ B. भाषा
✓ C. रमा
✗ D. भारती

Question ID : 10343511716

Q.5 आभा ने बताया कि, यह सभी कारें आज शाम में नीलाम हो रही हैं।' वाक्य ___ का उदाहरण है।

Ans
✗ A. पूर्ण वर्तमान का
✗ B. संदिग्ध वर्तमान का
✗ C. सामान्य वर्तमान का
✓ D. तात्कालिक वर्तमान का

Question ID : 10343511720

Q.6 निम्न में से कौन सा विलोम युग्म सुमेलित नहीं है?

Ans
✓ A. उत्तम - नरोत्तम
✗ B. उदार - कृपण
✗ C. चिरंतन - नश्वर
✗ D. उदात्त - अनुदात्त

Question ID : 10343511717

Q.7 हवा' का पर्यायवाची शब्द है-

Ans
✓ A. समीरण
✗ B. घन
✗ C. पतंग
✗ D. इषु

Question ID : 10343511715

Q.8 दिए गए वाक्यों में से वाक्य विन्यास की दृष्टि से शुद्ध वाक्य का चयन कीजिए।

Ans
✗ A. वह पुत्रवत् अपनी प्रजा का पालन करता था।
✗ B. आकाश ने कहा कि, उसने दौड़ते हुए आचार्य को देखा।
✓ C. उसके गले में गुलाब और गेंदे की एक माला पड़ी थी।
✗ D. सीता ने राम के गले में एक गेंदे की माला डाल दी।

Question ID : 10343511723

Q.9 उचित मुहावरे से वाक्य पूर्ण करें।
बुड्ढे को शादी करने का शौक़ चर्राया है, यानी _____ है

Ans
✗ A. बालू से तेल निकालना
✗ B. पहाड़ से टक्कर लेना
✗ C. भिड़ के छत्ते को छेड़ दिया
✓ D. बासी कढ़ी में उबाल आया

Question ID : 10343511719

Q.10 सीता बच्चों के लिए फल लाई।' वाक्य में कारक है-

Ans
✗ A. अपादान
✗ B. संबंध
✓ C. सम्प्रदान
✗ D. सम्बोधन

Question ID : 10343511711

Q.11 उचित विकल्प का चयन कर वाक्य पूर्ण कीजिए।
विषयों में ____ होने से सर्वनाश होता है।

Ans
✗ A. प्रेम
✗ B. अनुराग
✗ C. भक्ति
✓ D. आसक्ति

Question ID : 10343511725

Q.12 काशिफ डॉक्टर बन गया होता यदि उससे नीट की परीक्षा पास हो जाती।' वाक्य ____ का उदाहरण है।

Ans
✗ A. हेतुहेतुमद्भविष्य काल
✗ B. संदिग्ध भूत काल
✓ C. हेतुहेतुमद्भूत काल
✗ D. अपूर्ण भूत काल

Question ID : 10343511721

Q.13 उचित शब्द से वाक्य पूर्ण करें।
मैंने _____ में सोचा कि भला ऐसा क्यों होता है।

Ans
✗ A. मस्तिष्क
✓ B. मन
✗ C. चित्त
✗ D. अंत:करण

Question ID : 10343511724

Q.14 पेट पर पट्टी बांधना' मुहावरे का अर्थ है-

Ans
✗ A. बात को अपने तक न रख पाना
✗ B. कठिन परिश्रम के लिए तैयार होना
✗ C. पेट में दर्द होना
✓ D. भूखा रह जाना

Question ID : **10343511718**

Q.15 निम्न में से किस संज्ञा शब्द में 'इक' प्रत्यय लगाकर नवीन विशेषण शब्द बनेगा?

Ans
✗ A. फल
✓ B. धर्म
✗ C. विद्या
✗ D. पुष्प

Question ID : **10343511712**

Comprehension:

दिये गए गध्यांश को ध्यानपूर्वक पढ़ें और दिये गए प्रश्नों का उत्तर दीजिये।
बिहारी का समस्त सृजन दरबारी काव्य परंपरा की रुचियों को ध्यान में रखकर सामने आया। रीतिवादी परिवेश पर सामंत कुमारों की धाक और धमक थी और कवि इन्हीं सामंत कुमारों के मनोविनोद के लिए राज्याश्रय पाकर गाते थे। राज्याश्रय पोषण के सभी तत्त्व रीतिकाल के काव्य में समाहित होते गए और काव्य चमत्कारवाद, नायक-नायिका भेद, अलंकार प्रदर्शन का कृत्रिम क्षेत्र ही बनता गया। इस समाज और काव्य के मूल्यादर्शों की पूर्णता भोगवाद, नारी के सौंदर्य और शारीरिक वासना की तृप्ति में हुई। नारी के चारों ओर अलंकार, नायिका-भेद, प्रकृति वर्णन आदि चक्कर काट उठे। फलत: इनका प्रिय काव्य विषय बना नारी का नखशिख वर्णन, हाव-हेला वर्णन, अभिसारिका की विभिन्न अवस्थाओं और दशाओं का चित्रण। राजाश्रय और चमत्कार प्रदर्शन की होड़ में श्लेष, यमक, अन्योक्ति और अनुप्रास अलंकारों की बाढ़ आ गई और कृत्रिम कार्य व्यापारों से काव्य का सहज सौंदर्य नष्ट हो गया। कविवर बिहारी लाल का व्यक्तित्त्व काव्य मर्मज्ञ, शास्त्र ज्ञाता, बहुज्ञ मानव और रसिक व्यक्ति के आदर्श पर निर्मित हुआ था। बिहारी की एक ही रचना 'सतसैया' या 'सतसई' नाम से मिलती है। इसमें बिहारी के 713 मुक्तक दोहे तथा सोरठे संगृहित हैं। श्रृंगार, नीति और भक्ति के दोहों से युक्त इनकी 'सतसई' भाषा की समस्त शक्ति एवं अर्थ के पैनेपन को समेटे है। बिहारी के दोहे अर्थ गूढ़ होने के कारण 'गागर में सागर' भरने की कहावत चरितार्थ करते हैं। सतसई की पहली टीका 1662 में कृष्ण लाल ने की है। दूसरी टीका 1763 में मानसिंह ने और तीसरी 1714 में अनवर ने 'अनवर चंद्रिका' नाम से की है।

SubQuestion No : 16

Q.16 बिहारी सतसई के लिए 'गागर में सागर' का मुहावरा निम्न में से किस कारण से प्रयुक्त होता है?

Ans
✗ A. आकार में छोटी होने के कारण
✗ B. मुक्तक काव्य रचना होने के कारण
✓ C. अर्थ की गूढ़ता के कारण
✗ D. दोहा छंद अपनाने के कारण

Question ID : **10343511730**

Comprehension:

दिये गए गध्यांश को ध्यानपूर्वक पढ़ें और दिये गए प्रश्नों का उत्तर दीजिये।
बिहारी का समस्त सृजन दरबारी काव्य परंपरा की रुचियों को ध्यान में रखकर सामने आया। रीतिवादी परिवेश पर सामंत कुमारों की धाक और धमक थी और कवि इन्हीं सामंत कुमारों के मनोविनोद के लिए राज्याश्रय पाकर गाते थे। राज्याश्रय पोषण के सभी तत्त्व रीतिकाल के काव्य में समाहित होते गए और काव्य चमत्कारवाद, नायक-नायिका भेद, अलंकार प्रदर्शन का कृत्रिम क्षेत्र ही बनता गया। इस समाज और काव्य के मूल्यादर्शों की पूर्णता भोगवाद, नारी के सौंदर्य और शारीरिक वासना की तृप्ति में हुई। नारी के चारों ओर अलंकार, नायिका-भेद, प्रकृति वर्णन आदि चक्कर काट उठे। फलत: इनका प्रिय काव्य विषय बना नारी का नखशिख वर्णन, हाव-हेला वर्णन, अभिसारिका की विभिन्न अवस्थाओं और दशाओं का चित्रण। राजाश्रय और चमत्कार प्रदर्शन की होड़ में श्लेष, यमक, अन्योक्ति और अनुप्रास अलंकारों की बाढ़ आ गई और कृत्रिम कार्य व्यापारों से काव्य का सहज सौंदर्य नष्ट हो गया। कविवर बिहारी लाल का व्यक्तित्त्व काव्य मर्मज्ञ, शास्त्र ज्ञाता, बहुज्ञ मानव और रसिक व्यक्ति के आदर्श पर निर्मित हुआ था। बिहारी की एक ही रचना 'सतसैया' या 'सतसई' नाम से मिलती है। इसमें बिहारी के 713 मुक्तक दोहे तथा सोरठे संगृहित हैं। श्रृंगार, नीति और भक्ति के दोहों से युक्त इनकी 'सतसई' भाषा की समस्त शक्ति एवं अर्थ के पैनेपन को समेटे है। बिहारी के दोहे अर्थ गूढ़ होने के कारण 'गागर में सागर' भरने की कहावत चरितार्थ करते हैं। सतसई की पहली टीका 1662 में कृष्ण लाल ने की है। दूसरी टीका 1763 में मानसिंह ने और तीसरी 1714 में अनवर ने 'अनवर चंद्रिका' नाम से की है।

SubQuestion No : 17

Q.17 कृत्रिम' का विलोम है-

Ans
✗ A. नक़ली
✓ B. प्रकृत
✗ C. अकृत्रिमता
✗ D. अवकृत्रिम

Question ID : **10343511727**

Comprehension:

दिये गए गध्यांश को ध्यानपूर्वक पढ़ें और दिये गए प्रश्नों का उत्तर दीजिये।
बिहारी का समस्त सृजन दरबारी काव्य परंपरा की रुचियों को ध्यान में रखकर सामने आया। रीतिवादी परिवेश पर सामंत कुमारों की धाक और धमक थी और कवि इन्हीं सामंत कुमारों के मनोविनोद के लिए राज्याश्रय पाकर गाते थे। राज्याश्रय पोषण के सभी तत्त्व रीतिकाल के काव्य में समाहित होते गए और काव्य चमत्कारवाद, नायक-नायिका भेद, अलंकार प्रदर्शन का कृत्रिम क्षेत्र ही बनता गया। इस समाज और काव्य के मूल्यादर्शों की पूर्णता भोगवाद, नारी के सौंदर्य और शारीरिक वासना की तृप्ति में हुई। नारी के चारों ओर अलंकार, नायिका-भेद, प्रकृति वर्णन आदि चक्कर काट उठे। फलत: इनका प्रिय काव्य विषय बना नारी का नखशिख वर्णन, हाव-हेला वर्णन, अभिसारिका की विभिन्न अवस्थाओं और दशाओं का चित्रण। राजाश्रय और चमत्कार प्रदर्शन की होड़ में श्लेष, यमक, अन्योक्ति और अनुप्रास अलंकारों की बाढ़ आ गई और कृत्रिम कार्य व्यापारों से काव्य का सहज सौंदर्य नष्ट हो गया। कविवर बिहारी लाल का व्यक्तित्त्व काव्य मर्मज्ञ, शास्त्र ज्ञाता, बहुज्ञ मानव और रसिक व्यक्ति के आदर्श पर निर्मित हुआ था। बिहारी की एक ही रचना 'सतसैया' या 'सतसई' नाम से मिलती है। इसमें बिहारी के 713 मुक्तक दोहे तथा सोरठे संगृहित हैं। श्रृंगार, नीति और भक्ति के दोहों से युक्त इनकी 'सतसई' भाषा की समस्त शक्ति एवं अर्थ के पैनेपन को समेटे है। बिहारी के दोहे अर्थ गूढ़ होने के कारण 'गागर में सागर' भरने की कहावत चरितार्थ करते हैं। सतसई की पहली टीका 1662 में कृष्ण लाल ने की है। दूसरी टीका 1763 में मानसिंह ने और तीसरी 1714 में अनवर ने 'अनवर चंद्रिका' नाम से की है।

SubQuestion No : 18

Q.18 मानसिंह ने 'बिहारी सतसई' की टीका कब लिखी?

Ans
✓ A. 1763
✗ B. 1717
✗ C. 1714
✗ D. 1662

Question ID : **10343511729**

Comprehension:

दिये गए गध्यांश को ध्यानपूर्वक पढ़ें और दिये गए प्रश्नों का उत्तर दीजिये।
बिहारी का समस्त सृजन दरबारी काव्य परंपरा की रुचियों को ध्यान में रखकर सामने आया। रीतिवादी परिवेश पर सामंत कुमारों की धाक और धमक थी और कवि इन्हीं सामंत कुमारों के मनोविनोद के लिए राज्याश्रय पाकर गाते थे। राज्याश्रय पोषण के सभी तत्त्व रीतिकाल के काव्य में समाहित होते गए और काव्य चमत्कारवाद, नायक-नायिका भेद, अलंकार प्रदर्शन का कृत्रिम क्षेत्र ही बनता गया। इस समाज और काव्य के मूल्यादर्शों की पूर्णता भोगवाद, नारी के सौंदर्य और शारीरिक वासना की तृप्ति में हुई। नारी के चारों ओर अलंकार, नायिका-भेद, प्रकृति वर्णन आदि चक्कर काट उठे। फलत: इनका प्रिय काव्य विषय बना नारी का नखशिख वर्णन, हाव-हेला वर्णन, अभिसारिका की विभिन्न अवस्थाओं और दशाओं का चित्रण। राजाश्रय और चमत्कार प्रदर्शन की होड़ में श्लेष, यमक, अन्योक्ति और अनुप्रास अलंकारों की बाढ़ आ गई और कृत्रिम कार्य व्यापारों से काव्य का सहज सौंदर्य नष्ट हो गया। कविवर बिहारी लाल का व्यक्तित्त्व काव्य मर्मज्ञ, शास्त्र ज्ञाता, बहुज्ञ मानव और रसिक व्यक्ति के आदर्श पर निर्मित हुआ था। बिहारी की एक ही रचना 'सतसैया' या 'सतसई' नाम से मिलती है। इसमें बिहारी के 713 मुक्तक दोहे तथा सोरठे संगृहित हैं। श्रृंगार, नीति और भक्ति के दोहों से युक्त इनकी 'सतसई' भाषा की समस्त शक्ति एवं अर्थ के पैनेपन को समेटे है। बिहारी के दोहे अर्थ गूढ़ होने के कारण 'गागर में सागर' भरने की कहावत चरितार्थ करते हैं। सतसई की पहली टीका 1662 में कृष्ण लाल ने की है। दूसरी टीका 1763 में मानसिंह ने और तीसरी 1714 में अनवर ने 'अनवर चंद्रिका' नाम से की है।

SubQuestion No : 19

Q.19 बिहारी के विषय में असत्य कथन है-

Ans
- ✔ A. बिहारी ने अपने काव्य ग्रंथ 'बिहारी सतसई' का प्रबंध ग्रंथ के रूप में प्रणयन किया।
- ✘ B. बिहारी ने काव्य सृजन दरबारी काव्य परंपरा की रुचियों के अनुसार किया।
- ✘ C. बिहारी काव्य मर्मज्ञ, बहुज्ञ, और शास्त्र ज्ञाता थे।
- ✘ D. उन्होंने श्रृंगार, नीति और भक्ति से परिपूर्ण काव्य लिखा।

Question ID : **10343511731**

Comprehension:

दिये गए गध्यांश को ध्यानपूर्वक पढ़ें और दिये गए प्रश्नों का उत्तर दीजिये।
बिहारी का समस्त सृजन दरबारी काव्य परंपरा की रुचियों को ध्यान में रखकर सामने आया। रीतिवादी परिवेश पर सामंत कुमारों की धाक और धमक थी और कवि इन्हीं सामंत कुमारों के मनोविनोद के लिए राज्याश्रय पाकर गाते थे। राज्याश्रय पोषण के सभी तत्त्व रीतिकाल के काव्य में समाहित होते गए और काव्य चमत्कारवाद, नायक-नायिका भेद, अलंकार प्रदर्शन का कृत्रिम क्षेत्र ही बनता गया। इस समाज और काव्य के मूल्यादर्शों की पूर्णता भोगवाद, नारी के सौंदर्य और शारीरिक वासना की तृप्ति में हुई। नारी के चारों ओर अलंकार, नायिका-भेद, प्रकृति वर्णन आदि चक्कर काट उठे। फलत: इनका प्रिय काव्य विषय बना नारी का नखशिख वर्णन, हाव-हेला वर्णन, अभिसारिका की विभिन्न अवस्थाओं और दशाओं का चित्रण। राजाश्रय और चमत्कार प्रदर्शन की होड़ में श्लेष, यमक, अन्योक्ति और अनुप्रास अलंकारों की बाढ़ आ गई और कृत्रिम कार्य व्यापारों से काव्य का सहज सौंदर्य नष्ट हो गया। कविवर बिहारी लाल का व्यक्तित्त्व काव्य मर्मज्ञ, शास्त्र ज्ञाता, बहुज्ञ मानव और रसिक व्यक्ति के आदर्श पर निर्मित हुआ था। बिहारी की एक ही रचना 'सतसैया' या 'सतसई' नाम से मिलती है। इसमें बिहारी के 713 मुक्तक दोहे तथा सोरठे संगृहित हैं। श्रृंगार, नीति और भक्ति के दोहों से युक्त इनकी 'सतसई' भाषा की समस्त शक्ति एवं अर्थ के पैनेपन को समेटे है। बिहारी के दोहे अर्थ गूढ़ होने के कारण 'गागर में सागर' भरने की कहावत चरितार्थ करते हैं। सतसई की पहली टीका 1662 में कृष्ण लाल ने की है। दूसरी टीका 1763 में मानसिंह ने और तीसरी 1714 में अनवर ने 'अनवर चंद्रिका' नाम से की है।

SubQuestion No : 20

Q.20 रीतिकालीन काव्य के संदर्भ में असत्य है-

Ans
- ✘ A. सम्पूर्ण काव्य नारी के शरीर के इर्द-गिर्द ही घूम रहा था।
- ✘ B. काव्य में चमत्कार प्रदर्शन और अलंकरण की प्रवृत्ति बढ़ी।
- ✔ C. सामाजिक समस्याओं को बड़ी तत्परता से उठाया गया।
- ✘ D. यह राज्याश्रय में लिखा गया काव्य है।

Question ID : **10343511728**

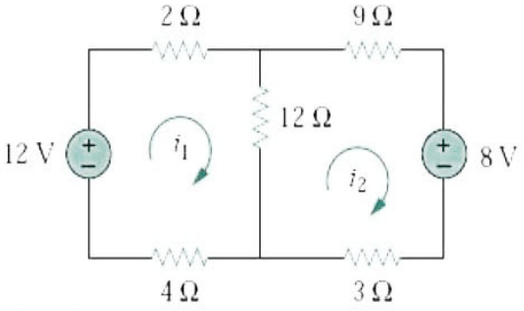
Section : Discipline1

Q.1 In an R-L series circuit connected to a sinusoidal source, the current is ____.

Ans
- ✗ A. In phase with the voltage
- ✓ B. Lagging the voltage by an angle between 0° and 90°
- ✗ C. Leading the voltage by an angle between 0° and 90°
- ✗ D. Leading the voltage by 90°

Question ID : **10343511746**

Q.2 Find the current i_1 in the following circuit.



Ans
- ✗ A. 1.33 A
- ✗ B. 0.33 A
- ✗ C. 0 A
- ✓ D. 0.67 A

Question ID : **10343511739**

Q.3 A single phase induction motor with single winding has _____.

Ans
- ✓ A. Zero starting torque
- ✗ B. Very high starting torque
- ✗ C. Very low starting torque
- ✗ D. Unity stating torque

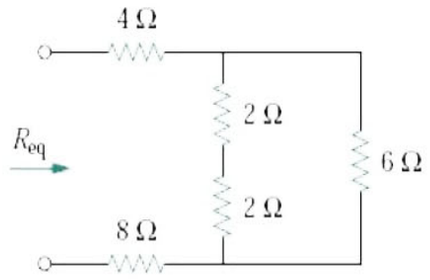
Question ID : **10343511747**

Q.4 If a function in x is given by $f(x) = x + \frac{1}{x}$ .the vaue of $\frac{df(x)}{dx}$ at x= -1 is given by:

Ans
- ✓ A. 0
- ✗ B. 1
- ✗ C. 2
- ✗ D. 1.5

Question ID : **10343511732**

Q.5 The value of R_{eq} in the following circuit is ____



Ans
✗ A. 16.2 Ω
✗ B. 15.6 Ω
✗ C. 12.6 Ω
✓ D. 14.4 Ω

Question ID : **10343511737**

Q.6 Reverse transfer impedance of a two port network is given by ____.

Ans
✓ A. $Z_{12} = \left[\frac{V_1}{I_2}\right] at\ I_1 = 0$
✗ B. $Z_{12} = \left[\frac{V_2}{I_2}\right] at\ I_1 = 0$
✗ C. $Z_{12} = \left[\frac{V_2}{I_1}\right] at\ I_2 = 0$
✗ D. $Z_{12} = \left[\frac{V_1}{I_1}\right] at\ I_2 = 0$

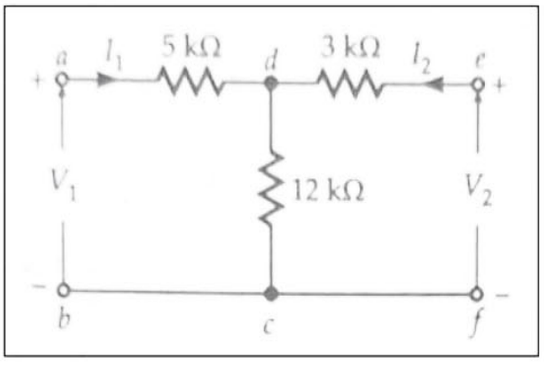
Question ID : **10343511740**

Q.7 Form factor for a sinusoidal wave is given by _____.

Ans
✗ A. 1.732
✗ B. 1.414
✗ C. 1.5
✓ D. 1.110

Question ID : **10343511745**

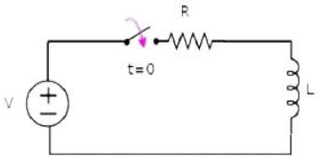
Q.8 The Z-parameter Z_{11} of the following network is ____.



Ans
✗ A. 12 kΩ
✗ B. 15 kΩ
✗ C. 18 kΩ
✓ D. 17 kΩ

Question ID : **10343511741**

Q.9 The switch in the following circuit is turned on at t=0. Final steady state current in the circuit will be ____.



Ans
✗ A. $\frac{V}{2R}$
✗ B. $\frac{V}{\omega L}$
✓ C. $\frac{V}{R}$
✗ D. $\frac{VL}{R}$

Question ID : **10343511742**

Q.10 The value of $\int_0^{\pi/4} 2cos^2 4t\, dt$ is ____.

Ans

✔ A. $\frac{\pi}{4}$

✗ B. $\frac{\pi}{2}$

✗ C. $\frac{\pi}{6}$

✗ D. $\frac{3\pi}{4}$

Question ID : **10343511733**

Q.11 Full load regulation of four transformers with same power rating are 40%, 20%, 10% and 80% respectively. Which one should be recommended for obtaining better performance?

Ans

✔ A. 10%

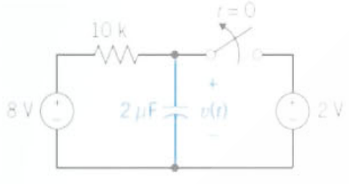
✗ B. 40%

✗ C. 20%

✗ D. 80%

Question ID : **10343511749**

Q.12 The expression for capacitor voltage $v(t)$ when the switch is opened at t=0 (time constant is in milliseconds) is given by ____.



Ans

✔ A. $v(t) = 8 - 6e^{-t/20}\ V$

✗ B. $v(t) = 6 - 8e^{-t/20}\ V$

✗ C. $v(t) = 8 + 6e^{-t/20}\ V$

✗ D. $v(t) = 6 + 8e^{-t/20}\ V$

Question ID : **10343511743**

Q.13 Eigen values of the matrix $\begin{bmatrix} -1 & 4 \\ 4 & -1 \end{bmatrix}$ are ____ and ____.

Ans

✗ A. -3 and -5

✗ B. -3 and 5

✗ C. 3 and 5

✔ D. 3 and -5

Question ID : **10343511735**

Q.14 Time constant of an RL circuit with R=2 Ω and L=10 H are given by ___.

Ans
- ✔ A. 5 sec
- ✗ B. 3 sec
- ✗ C. 10 sec
- ✗ D. 2 sec

Question ID : **10343511744**

Q.15 Which of the following trigonometric function can be represented as the following series

$$x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots$$

Ans
- ✗ A. cos (x)
- ✗ B. cot (x)
- ✔ C. sin (x)
- ✗ D. tan (x)

Question ID : **10343511736**

Q.16 In two closed loops of an electrical circuit, the currents flowing are given by the simultaneous equations.

$I_1 + 2I_2 + 4 = 0$

$5I_1 + 3I_2 - 1 = 0$

The currents I_1 and I_2 are ____ and ____ respectively.

Ans
- ✗ A. 2, 3
- ✗ B. 3, 2
- ✗ C. 3, -2
- ✔ D. 2, -3

Question ID : **10343511734**

Q.17 A single phase half bridge inverter consists of ____ number of thyristors and _____ number of diodes

Ans
- ✗ A. 4, 4
- ✔ B. 2, 2
- ✗ C. 4, 2
- ✗ D. 2, 4

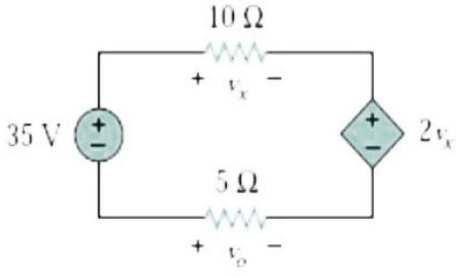
Question ID : **10343511751**

Q.18 The savings while converting an ordinary transformer of transformation ratio K into an auto transformer is given by _____.

Ans
- ✔ A. K times the weight of Cu in ordinary transformer
- ✗ B. $1/K^2$ times the weight of Cu in ordinary transformer
- ✗ C. 1/K times the weight of Cu in ordinary transformer
- ✗ D. K^2 times the weight of Cu in ordinary transformer

Question ID : **10343511750**

Q.19 Find the voltage v_x in the circuit shown.



Ans
- ✗ A. 15 V
- ✗ B. 30 V
- ✗ C. 5 V
- ✓ D. 10 V

Question ID : **10343511738**

Q.20 At a high value of slip, the torque of a three phase induction motor is _____.

Ans
- ✓ A. inversely proportional to slip
- ✗ B. Unity
- ✗ C. Directly proportional to slip
- ✗ D. Zero

Question ID : **10343511748**

Section : Discipline2

Q.1 In a single phase full converter having a firing angle of α, the average output voltage is given by _____.

Ans
- ✗ A. $V_d = \frac{V_m}{2\pi} cos\alpha$
- ✓ B. $V_d = \frac{2V_m}{\pi} cos\alpha$
- ✗ C. $V_d = \frac{3V_m}{\pi} cos\alpha$
- ✗ D. $V_d = \frac{V_m}{\pi} cos\alpha$

Question ID : **10343511754**

Q.2 Which among the following is not a method for transistor biasing?

Ans
- ✗ A. Base resistor method
- ✗ B. Emitter bias method
- ✗ C. Voltage-divider bias method
- ✓ D. Emitter-collector bias method

Question ID : **10343511757**

Q.3 Which of the following is used to prevent hunting in a synchronous machine?

Ans
- ✓ A. Damper windings
- ✗ B. Armature windings
- ✗ C. Equalizer rings
- ✗ D. Field windings

Question ID : **10343511769**

Q.4 In a three phase 180 degree mode VSI with V_{dc} as the DC voltage. RMS value of phase voltage is given by _____.

Ans
- ✗ A. $1.414\ V_{dc}$
- ✗ B. $0.8165\ V_{dc}$
- ✗ C. $0.4502\ V_{dc}$
- ✓ D. $0.4714\ V_{dc}$

Question ID : **10343511752**

Q.5 Which of the following converter is used in vehicle to grid technology?

Ans
- ✗ A. Single phase half controlled rectifier
- ✗ B. Three phase fully controlled rectifier
- ✓ C. Bidirectional converter
- ✗ D. Buck converter

Question ID : **10343511753**

Q.6 The input impedance of an ideal operational amplifier is _____.

Ans
- ✗ A. Depends on the input voltage
- ✗ B. Unity
- ✓ C. Infinite
- ✗ D. Zero

Question ID : **10343511760**

Q.7 In a single phase half wave controlled rectifier, the average load current with resistive load of R ohms is given by _____.

Ans

✗ A. $I_d = \frac{V_m}{\pi R} cos\alpha$

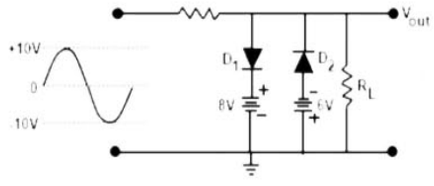
✗ B. $I_d = \frac{2V_m}{\pi R}(1 + cos\alpha)$

✓ C. $I_d = \frac{V_m}{2\pi R}(1 + cos\alpha)$

✗ D. $I_d = \frac{V_m}{2\pi R} cos\alpha$

Question ID : **10343511755**

Q.8 If the voltage drop in a diode is 0.7 V, maximum output voltage during the positive cycle will be _____.



Ans

✓ A. +8.7 V

✗ B. +7.3 V

✗ C. +6.7 V

✗ D. +5.3 V

Question ID : **10343511759**

Q.9 The core of a transformer is laminated to _____.

Ans

✗ A. Reduce flux loss

✗ B. Reduce copper losses

✗ C. Reduce hysteresis loss

✓ D. Reduce eddy current loss

Question ID : **10343511766**

Q.10 Maximum efficiency of a series fed Class-A amplifier is _____.

Ans

✗ A. 100%

✗ B. 50%

✓ C. 25%

✗ D. 80%

Question ID : **10343511758**

Q.11 In d.c. generators, armature reaction is produced by ____.

Ans
- ✔ A. Armature current
- ✗ B. Interpole winding current
- ✗ C. Field current
- ✗ D. Damper winding current

Question ID : **10343511764**

Q.12 Which among the following represents the simplified SOP form of the expression $f = \Sigma m(1,5,6,12,13,14) + d(2,4)$?

Ans
- ✗ A. $f = AB\overline{C} + BD + \overline{C}\,D$
- ✗ B. $f = B\overline{C} + AB\overline{D} + \overline{A}\,\overline{C}$
- ✔ C. $f = B\overline{C} + B\overline{D} + \overline{A}\,\overline{C}\,D$
- ✗ D. $f = B\overline{C}\,\overline{D} + A\overline{D} + \overline{A}\,\overline{C}$

Question ID : **10343511771**

Q.13 Average emf per turn in a transformer with standard notations is _____.

Ans
- ✗ A. $1.11\,f\emptyset_m\ volt$
- ✔ B. $4f\emptyset_m\ volt$
- ✗ C. $2f\emptyset_m\ volt$
- ✗ D. $4.44\,f\emptyset_m\ volt$

Question ID : **10343511767**

Q.14 In a progressive lap winding with Z conductors and P poles, the front Y_F and back pitch Y_B are respectively given by _____.

Ans
- ✔ A. $Y_F = \frac{Z}{P} - 1, Y_B = \frac{Z}{P} + 1$
- ✗ B. $Y_F = \frac{Z}{P} - 1, Y_B = \frac{Z}{P}$
- ✗ C. $Y_F = \frac{Z}{P} + 1, Y_B = \frac{Z}{P} - 1$
- ✗ D. $Y_F = \frac{Z}{P}, Y_B = \frac{Z}{P} + 1$

Question ID : **10343511763**

Q.15 The maximum rate at which the amplifier output can change in an operational amplifier is referred to as _____.

Ans
- ✗ A. Frequency rate
- ✗ B. Signal rate
- ✗ C. baud rate
- ✓ D. Slew rate

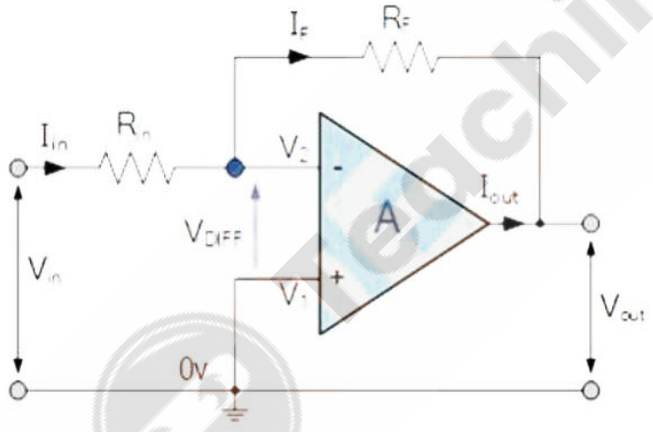
Question ID : **10343511761**

Q.16 Following output waveform can be realized using _____ number of thyristors and ____ number of diodes from a sinusoidal waveform.

Ans
- ✗ A. 3,1
- ✗ B. 2, 2
- ✗ C. 3,3
- ✓ D. 1,3

Question ID : **10343511756**

Q.17 Identify the following circuit.



Ans
- ✗ A. Integrator
- ✓ B. inverting amplifier
- ✗ C. Noninverting amplifier
- ✗ D. Summing amplifier

Question ID : **10343511762**

Q.18 Which of the following machine can be used to improve power factor?

Ans
✗ A. Three phase induction motor

✓ B. Synchronous motor

✗ C. Single phase induction motor

✗ D. Dc motor

Question ID : **10343511770**

Q.19 The regulation of a transformer at a power factor of 0.8 lag if the percentage resistance drop is 1.0% and percentage reactance drop is 5.0% is given by _____.

Ans
✓ A. 3.8%

✗ B. 7.6%

✗ C. 2.4%

✗ D. 4.5%

Question ID : **10343511765**

Q.20 The eddy current loss in an electrical machine is ____.

Ans
✗ A. Proportional to the square root of the frequency

✗ B. Proportional to the frequency

✓ C. Proportional to the square of the frequency

✗ D. Independent of the frequency

Question ID : **10343511768**

Section : Discipline3

Q.1 Discrete Fourier transform of a signal x(n) can be obtained using _____.

Ans
✗ A. $X(k) = \frac{1}{N}\sum_{n=0}^{N-1} x(n)e^{-j2\pi kn/N}$

✓ B. $X(k) = \sum_{n=0}^{N-1} x(n)e^{-j2\pi kn/N}$

✗ C. $X(k) = \frac{1}{N}\sum_{n=0}^{N-1} x(n)e^{-j2\pi kn/N}$

✗ D. $X(k) = \sum_{n=0}^{N-1} x(n)e^{j2\pi kn/N}$

Question ID : **10343511790**

Q.2 How many T flip-flops are need to realise a mod-10 asynchronous counter?

Ans
- ✔ A. 4
- ✗ B. 10
- ✗ C. 5
- ✗ D. 3

Question ID : **10343511772**

Q.3 Percentage resolution of a 4-bit DAC is _____.

Ans
- ✗ A. 4.33%
- ✗ B. 3.67%
- ✗ C. 3.33%
- ✔ D. 6.67%

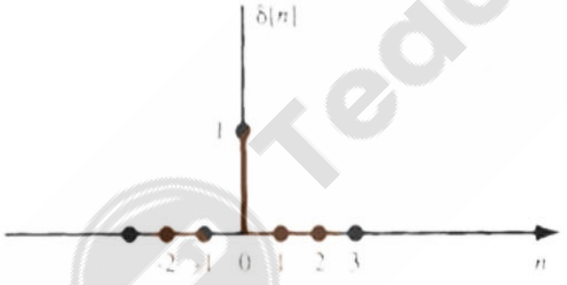
Question ID : **10343511776**

Q.4 Lag compensator is essentially a _____ network.

Ans
- ✗ A. High pass filter
- ✗ B. Band reject filter
- ✔ C. Low pass filter
- ✗ D. Bandpass filter

Question ID : **10343511786**

Q.5 Identify the following signal.



Ans
- ✗ A. Unit Step Sequence
- ✗ B. Sinusoidal Sequence
- ✗ C. Complex Exponential Sequence
- ✔ D. Unit Impulse Sequence

Question ID : **10343511779**

Q.6 A signal represented by $x(t) = e^{j\pi t}$. Period of the signal is _____.

Ans
- ✔ A. 2
- ✗ B. 4
- ✗ C. 1
- ✗ D. π

Question ID : **10343511780**

Q.7 If x[−n] = −x[n], the signal is said to be ____.

Ans
- ✗ A. linear
- ✗ B. Causal
- ✗ C. Time invariant
- ✔ D. Odd

Question ID : **10343511778**

Q.8 In an active high S-R latch, under which condition, output will be indeterminate?

Ans
- ✗ A. S=0 and R=0
- ✔ B. S=1 and R=1
- ✗ C. S=1 and R=0
- ✗ D. S=0 and R=1

Question ID : **10343511775**

Q.9 A band-limited signal which has no frequency components higher than f_M hertz can be recovered if the sampling frequency is _____.

Ans
- ✗ A. Less than $2f_M$
- ✔ B. Greater than or equal to $2f_M$
- ✗ C. Less than f_M
- ✗ D. Greater than or equal to f_M

Question ID : **10343511781**

Q.10 A signal is given by $x[n] = cos\frac{\pi n}{3}$. Fundamental period of the signal is _____.

Ans
- ✔ A. 6
- ✗ B. 8
- ✗ C. 2
- ✗ D. 3

Question ID : **10343511788**

Q.11 Steady state error of a 'Type 2' system excited by a ramp input is ____.

Ans
- ✗ A. Unity
- ✓ B. Zero
- ✗ C. 0.5
- ✗ D. Infinite

Question ID : **10343511783**

Q.12 Time domain sequence of the hamming window used in the design of FIR filters is given by ____.

Ans
- ✗ A. $0.46 - 0.54\,cos\frac{2\pi n}{N}$
- ✗ B. $0.64 - 0.54\,cos\frac{2\pi n}{N}$
- ✗ C. $0.64 - 0.46\,cos\frac{2\pi n}{N}$
- ✓ D. $0.54 - 0.46\,cos\frac{2\pi n}{N}$

Question ID : **10343511789**

Q.13 State transition matrix of an LTI system is given by _____.

Ans
- ✗ A. $\emptyset(t) = \mathcal{L}^{-1}(sI - A)$
- ✗ B. $\emptyset(t) = L^{-1}[(sI - A)]^{-1}$
- ✗ C. $\emptyset(t) = \mathcal{L}[(sI - A)]^{-1}$
- ✓ D. $\emptyset(t) = \mathcal{L}^{-1}[(sI - A)]^{-1}$

Question ID : **10343511787**

Q.14 Propagation delay of each flip-flops in a 4-bit synchronous counter is 30 nano seconds. The maximum possible time required for change of state of the counter is _____.

Ans
- ✓ A. 30 nano seconds
- ✗ B. 15 nano seconds
- ✗ C. 60 nano seconds
- ✗ D. 120 nano seconds

Question ID : **10343511774**

Q.15 Which among the following is not a time domain specification of a second order system?

Ans
- ✗ A. Steady state error
- ✗ B. Rise time
- ✓ C. Gain margin
- ✗ D. Peak overshoot

Question ID : **10343511784**

Q.16 EPROM stands for _____.

Ans
✗ A. Electrically programmable read-only memory

✗ B. Electronically Programmable read-only memory

✗ C. Enabled Programmable read only memory

✓ D. Erasable programmable read-only memory

Question ID : **10343511773**

Q.17 If X(k) is the DFT of x(n) and Y(k) is the DFT of y(n), which identify the property of DFT given by $\sum_{n=0}^{N-1} x(n)y^*(n) = \sum_{k=0}^{N-1} X(k)Y^*(k)$.

Ans
✗ A. Complex conjugate property

✗ B. Time reversal property

✗ C. Circular shift property

✓ D. Parseval's theorem

Question ID : **10343511791**

Q.18 Number of right hand poles in the following transfer function is ___.

$$G(s) = \frac{(s-3)(s+2)}{(s-4)(s-1)}$$

Ans
✗ A. 1

✗ B. 0

✗ C. 3

✓ D. 2

Question ID : **10343511782**

Q.19 For the following transfer function, determine the location of pole and zero for a lead compensator.

$$T(s) = \frac{s + {}^1/_T}{s + {}^1/_{aT}}$$

Ans
✗ A. Zero at $-{}^1/_T$ and pole at ${}^1/_{aT}$

✓ B. Zero at $-{}^1/_T$ and pole at $-{}^1/_{aT}$

✗ C. Zero at ${}^1/_T$ and pole at ${}^1/_{aT}$

✗ D. Zero at ${}^1/_T$ and pole at $-{}^1/_{aT}$

Question ID : **10343511785**

Q.20 A system has the following input-output relation $y[n] = n\,x[n]$. Which among the following statemeif nt is incorrect.

Ans
- ✔ A. The system is time-invariant.
- ✗ B. The system is linear
- ✗ C. The system is memoryless
- ✗ D. The system is causal

Question ID : **10343511777**

Section : Discipline4

Q.1 Which among the following pipeline units is used to implement computations encountered in scientific problems?

Ans
- ✗ A. Instruction Pipeline
- ✗ B. Data Pipeline
- ✗ C. RISC Pipeline
- ✔ D. Arithmetic Pipeline

Question ID : **10343511799**

Q.2 Which among property of ROC of z-transform is incorrect?

Ans
- ✗ A. If the z-transform X(z) is rational, then its ROC is bounded by poles or extends to infinity
- ✔ B. The ROC contain all the poles
- ✗ C. The ROC of X(z) consists of a ring in the z-plane centered about the origin.
- ✗ D. If x[n] is finite duration, the ROC is the entire z-plane, except possibly x=0 and x=∞

Question ID : **10343511792**

Q.3 Electronic spectroscopy uses the _____ region of electromagnetic spectrum.

Ans
- ✔ A. 200 to 760 nm
- ✗ B. 50 to 180 nm
- ✗ C. 100 to 260 nm
- ✗ D. 400 to 850 nm

Question ID : **10343511805**

Q.4 The second moment of a circular area about the diameter (D) is given by ____.

Ans

✗ A. $\frac{\pi D^4}{4}$

✗ B. $\frac{\pi D^4}{16}$

✗ C. $\frac{\pi D^4}{128}$

✓ D. $\frac{\pi D^4}{64}$

Question ID : **10343511802**

Q.5 The aerodynamic drag in an electric vehicle with usual notations is given by _____.

Ans

✗ A. $F_w = \rho A C_d (V + V_w)^2$

✗ B. $F_w = \frac{1}{2} \rho A C_d (V + V_w)$

✓ C. $F_w = \frac{1}{2} \rho A C_d (V + V_w)^2$

✗ D. $F_w = \frac{3}{4} \rho A C_d (V + V_w)^2$

Question ID : **10343511809**

Q.6 If the time taken by an object to reach the ground while dropped from the top of a building is 4 seconds, neglecting the air resistance, height of the building is _____.

Ans

✗ A. 7.84 km

✗ B. 7.84 m

✓ C. 78.4 m

✗ D. 784 m

Question ID : **10343511801**

Q.7 If n is the motor speed in rpm and Nr is the number of rotor poles of an SRM motor, the fundamental switching frequency is given by _____.

Ans

✗ A. $f = \frac{n}{N_r} 60\ Hz$

✓ B. $f = \frac{n}{60} N_r\ Hz$

✗ C. $f = \frac{60}{n} N_r\ Hz$

✗ D. $f = \frac{N_r}{60n}\ Hz$

Question ID : **10343511810**

Q.8 Following instruction belongs to which addressing mode?

Add R4, #3

Ans
- ✗ A. Direct Addressing Mode
- ✗ B. Indirect Addressing Mode
- ✗ C. Register indirect addressing mode
- ✓ D. Immediate addressing Mode

Question ID : **10343511795**

Q.9 ROC of a unit impulse signal $\delta[n]$ is given by _____.

Ans
- ✓ A. Entire z-plane
- ✗ B. $|z| \leq 3$
- ✗ C. $|z| \leq 5$
- ✗ D. $|z| \geq 3$

Question ID : **10343511793**

Q.10 Which of the following elements will have the outer electronic configuration $(n-1)d^5ns^1$?

Ans
- ✗ A. Ar
- ✗ B. Al
- ✓ C. Cr
- ✗ D. Cu

Question ID : **10343511806**

Q.11 The service routine is not having the instructions to perform which among the following tasks?

Ans
- ✗ A. Save contents of processor registers
- ✓ B. Turn the interrupt facility off
- ✗ C. Check which flag is set
- ✗ D. Service the device whose flag is set

Question ID : **10343511798**

Q.12 Which of the following motor has a trapezoidal shaped back emf?

Ans
- ✗ A. Single phase induction motor
- ✓ B. Brushless DC motor
- ✗ C. Synchronous motor
- ✗ D. Induction motor

Question ID : **10343511808**

Q.13 Which of the following motor is not used in Electric Vehicles?

Ans
✗ A. PMSM
✓ B. Three phase synchronous motor
✗ C. Three phase induction motor
✗ D. BLDC

Question ID : **10343511811**

Q.14 Energy of a particle in relativistic quantum mechanics with momentum p, mass m, and velocity of light, c is related by ____.

Ans
✗ A. $E^2 = p^2c^4 + m^2c^4$
✓ B. $E^2 = p^2c^2 + m^2c^4$
✗ C. $E^2 = p^2c^2 + m^2c^2$
✗ D. $E^2 = p^2c^4 + m^2c^2$

Question ID : **10343511803**

Q.15 D' Alembert's principle is used for _____.

Ans
✗ A. analysing stresses in bridges
✗ B. Analyzing the stability of ship and boat structures
✓ C. reducing the problem of kinetics to equivalent statics problem
✗ D. designing safe structures

Question ID : **10343511800**

Q.16 Molecular weight of $CaCO_3$ is ____.

Ans
✓ A. 100
✗ B. 123
✗ C. 79
✗ D. 98

Question ID : **10343511807**

Q.17 The addressing mode in which the effective address is equal to the address part of the instruction is known as _____.

Ans
✗ A. Register Indirect addressing Mode
✗ B. Indirect Addressing Mode
✗ C. Immediate addressing Mode
✓ D. Direct Addressing Mode

Question ID : **10343511794**

Q.18 Data is directly transferred from an I/O device to RAM or from RAM to an I/O device in _____.

Ans
✗ A. Interrupt-initiated I/O
✗ B. RAM transfer
✓ C. DMA
✗ D. Programmed I/O

Question ID : **10343511797**

Q.19 In a two-bus organization, general-purpose registers are connected to _____.

Ans
✓ A. both buses
✗ B. ALU
✗ C. Only one bus
✗ D. ALU and two buses

Question ID : **10343511796**

Q.20 Two mirrors make an angle of 120° with each other. A ray is incident on mirror M1 at an angle of 65° to the normal. The angle of reflection of the ray from the normal of mirror M2 is ____.

Ans
✗ A. 65°
✗ B. 35°
✗ C. 45°
✓ D. 55°

Question ID : **10343511804**

Section : Discipline5

Q.1 In a three phase Δ/Y with differential protection, the CT connections on the primary and secondary will be _____ and _____ respectively.

Ans
✓ A. Y , Δ
✗ B. Y , Y
✗ C. Δ , Δ
✗ D. Δ , Y

Question ID : **10343511815**

Q.2 In the case of bidirectional operation of converters, which among the following strategy is used?

Ans
✓ A. Controllable switch in parallel with a diode
✗ B. Controllable switch in parallel with a capacitor
✗ C. Two controllable switches in parallel
✗ D. Controllable switch in parallel with an inductor

Question ID : **10343511827**

Q.3 In the case of single-phase full-wave rectifier having an input frequency f, load resistance R and inductive filter, the critical inductance LC is given by ____.

Ans

✗ A. $L_C = \frac{R}{2\pi f}$

✗ B. $L_C = \frac{R}{3\pi f}$

✓ C. $L_C = \frac{R}{6\pi f}$

✗ D. $L_C = \frac{2R}{3\pi f}$

Question ID : **10343511824**

Q.4 Which of the following is not an assumption used in the modelling of synchronous machine for dynamic analysis?

Ans

✗ A. Magnetic saturation and hysteresis are ignored

✗ B. Saliency is restricted to the rotor

✓ C. Harmonics are considered

✗ D. Air gap mmf is distributed sinusoidally

Question ID : **10343511829**

Q.5 A walk-through inspection of a facility to identify maintenance, operational or deficient equipment issues and to identify areas that need further evaluation is known as _____.

Ans

✓ A. Walk-Through Audit

✗ B. Investment Grade Audit

✗ C. Complete audit

✗ D. Energy Diagnosis

Question ID : **10343511822**

Q.6 While using the command RRC, which of the following flags are modified?

Ans

✗ A. Z

✗ B. AC

✓ C. CY

✗ D. P

Question ID : **10343511812**

Q.7 A three phase H-bridge voltage source inverter has ____ valid switch states.

Ans

✓ A. 8

✗ B. 4

✗ C. 9

✗ D. 6

Question ID : **10343511826**

Q.8 The Net present value of an Energy Conservation Project is Rs.35,000/- and the initial capital investment Rs 1,50,000/- calculate the Profitability Index of the project.

Ans
✗ A. 20%
✗ B. 40%
✓ C. 25%
✗ D. 35%

Question ID : **10343511821**

Q.9 Which among the following FACTS device do not have a series compensation function?

Ans
✗ A. UPFC
✗ B. SSSC
✗ C. TCSC
✓ D. STATCOM

Question ID : **10343511820**

Q.10 Which among the following is not a method for harmonic assessment?

Ans
✓ A. Laplace Transform
✗ B. Hartley Transform
✗ C. Fourier Series
✗ D. Fourier Transform

Question ID : **10343511819**

Q.11 A transmission line is provided with distance protection. Zone-1 of the protection system extends up to ____% of the line

Ans
✗ A. 100
✓ B. 80
✗ C. 50
✗ D. 60

Question ID : **10343511816**

Q.12 Plug Setting Multiplier of a 5 A rated relay with a current setting of 125% and CT ratio 400/5 when a fault current of 4000 A flowing in the primary is _____.

Ans
✓ A. 8
✗ B. 4
✗ C. 16
✗ D. 2

Question ID : **10343511817**

Q.13 Subsynchronous resonance is a phenomenon generally occurs in _____.

Ans
- ✗ A. Distribution system
- ✓ B. Series compensated transmission system
- ✗ C. Shunt compensated transmission system
- ✗ D. Uncompensated transmission system

Question ID : **10343511831**

Q.14 Plug setting multiplier of a relay is given by _____.

Ans
- ✗ A. $PSM = \frac{\text{Relay current setting}}{\text{Primary current} \times \text{CT ratio}}$
- ✗ B. $PSM = \frac{\text{Relay current setting}}{\text{Secondary current} \times \text{CT ratio}}$
- ✓ C. $PSM = \frac{\text{Primary current}}{\text{Relay current setting} \times \text{CT ratio}}$
- ✗ D. $PSM = \frac{\text{Secondary current}}{\text{Relay current setting} \times \text{CT ratio}}$

Question ID : **10343511814**

Q.15 In a single phase half wave diode rectifier with R-L load, if the conduction angle of the diode is $\beta < \pi$, the average output current is given by ____.

Ans
- ✗ A. $I_0 = \frac{V_m}{2\pi R}(1 + cos\beta)$
- ✓ B. $I_0 = \frac{V_m}{2\pi R}(1 - cos\beta)$
- ✗ C. $I_0 = \frac{V_m}{2\pi RL}(1 + cos\beta)$
- ✗ D. $I_0 = \frac{V_m}{2\pi RL}(1 + cos\beta)$

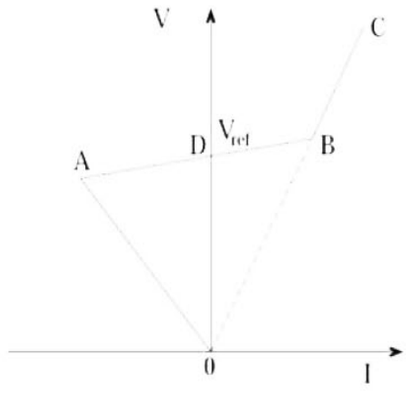
Question ID : **10343511823**

Q.16 Number of T-states in the STA command of 8085 microprocessor is _____.

Ans
- ✗ A. 7
- ✗ B. 9
- ✗ C. 8
- ✓ D. 13

Question ID : **10343511813**

Q.17 Identify the FACTS device whose control characteristics is given below.



Ans
- ✗ A. STATCOM
- ✓ B. SVC
- ✗ C. UPFC
- ✗ D. IPFC

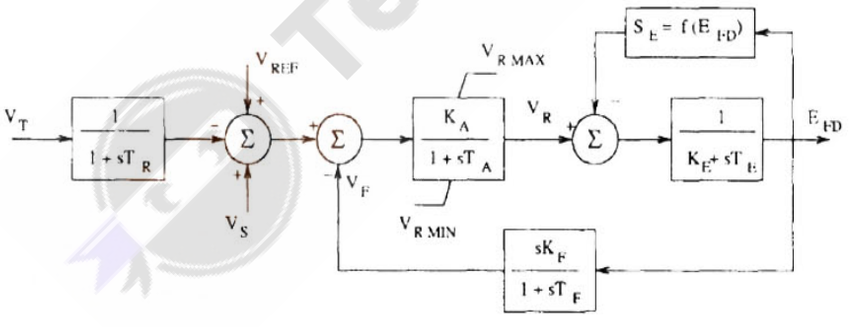
Question ID : **10343511818**

Q.18 In a 12 pulse converter, theoretically, the lowest order current harmonics present is ____.

Ans
- ✗ A. 6
- ✗ B. 13
- ✓ C. 11
- ✗ D. 12

Question ID : **10343511825**

Q.19 Identify the block diagram used in the power system dynamics studies.



Ans
- ✓ A. IEEE Type 1 excitation system
- ✗ B. Power system stabilizer
- ✗ C. Type DC1-DC commutator exciter
- ✗ D. Transient reduction system

Question ID : **10343511830**

Q.20 Which of the following represents swing equation?

Ans

✗ A. $M\frac{d\theta}{dt} = P_m - P_e$

✗ B. $M\frac{d\delta_m}{dt} = P_m - P_e$

✗ C. $M\frac{d^2\theta_m}{dt^2} = P_m - P_e$

✓ D. $M\frac{d^2\delta_m}{dt^2} = P_m - P_e$

Question ID : **10343511828**