पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड
(भारत सरकार का उद्यम)
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Participant ID	
Participant Name	
Test Center Name	
Test Date	13/08/2021
Test Time	5:30 PM - 7:30 PM
Subject	DIPLOMA TRAINEE (ELECTRICAL)

Section : **General English**

Q.1 Four words are given, out of which only one word is spelt correctly. Choose the correctly spelt word.

Ans
- ✗ A. eloqunce
- ✗ B. elloqunce
- ✓ C. eloquence
- ✗ D. elloquence

Question ID : **481843879**
Status : **Not Answered**
Chosen Option : **--**

Q.2 Some parts of a sentence have been jumbled up, and labelled P, Q, R and S. Select the option that gives the correct sequence in which these parts can be rearranged to form a meaningful and grammatically correct sentence.

The tendency then to

P. recurrent and may
Q. invention of verbal nouns is
R. mark new findings through
S. elicit the criticism of

jargon-infested prose.

Ans
- ✓ A. RQPS
- ✗ B. RPSQ
- ✗ C. RSPQ
- ✗ D. RQSP

Question ID : **481843888**
Status : **Not Answered**
Chosen Option : **--**

Q.3 **The sentence below has been divided into three parts. Select the part of the sentence that has an error. If the sentence has no error, select the option 'No Error'.**

I'd hardly finished cleaning/ up the mess than my/ son dropped cake on the floor.

Ans

✔ A. up the mess than my

✘ B. son dropped cake on the floor.

✘ C. No Error

✘ D. I'd hardly finished cleaning

Question ID : **481843893**
Status : **Answered**
Chosen Option : **A**

Q.4 **Some parts of a sentence have been jumbled up, and labelled P, Q, R and S. Select the option that gives the correct sequence in which these parts can be rearranged to form a meaningful and grammatically correct sentence.**

However, the main

P. to eradicate the
Q. resolve of the Scots
R. two countries lies in the
S. difference between the

disease.

Ans

✘ A. SPRQ

✔ B. SRQP

✘ C. SPQR

✘ D. SQRP

Question ID : **481843890**
Status : **Not Answered**
Chosen Option : **--**

Q.5 **Select the word that is ANTONYM (opposite in meaning) to the word given below.**

esoteric

Ans

✘ A. recondite

✔ B. obvious

✘ C. mysterious

✘ D. abstruse

Question ID : **481843885**
Status : **Not Answered**
Chosen Option : **--**

Q.6 **Select the most appropriate meaning of the given idiom.**

A bird in the hand is worth two in the bush

Ans

✗ A. Being upset for something that happened in the past.

✓ B. Having something that is certain is much better than taking a risk for more, because chances are you might lose everything.

✗ C. Anything that is common and easy to get.

✗ D. Something good that isn't recognized at first.

Question ID : **481843881**
Status : **Not Answered**
Chosen Option : **--**

Q.7 **Select the word segment that substitutes (replaces) the bracketed word segment correctly and completes the sentence meaningfully. Select the option 'no correction required' if the sentence is correct as given.**

The question was (never of if or will but how).

Ans

✗ A. never if or will but how?

✗ B. never of if or will it be but how?

✗ C. never off or if or will but how?

✓ D. No correction required

Question ID : **481843887**
Status : **Not Answered**
Chosen Option : **--**

Q.8 **Select the word that is SYNONYM (similar in meaning) to the word given below.**

abscond

Ans

✗ A. endure

✗ B. confront

✓ C. flee

✗ D. abide

Question ID : **481843884**
Status : **Not Answered**
Chosen Option : **--**

Q.9 **Select the most appropriate 'one word ' for the expressions given below.**

A period of time in the past that was idyllically happy and peaceful

Ans

✗ A. Cess

✗ B. Oracy

✓ C. Halcyon

✗ D. Acumen

Question ID : **481843880**
Status : **Not Answered**
Chosen Option : **--**

Q.10 Select the most appropriate meaning of the given idiom.

Have an Axe to Grind

Ans

✔ A. To have a dispute with someone.

✘ B. Quickly doing things results in a poor ending.

✘ C. Deteriorating and headed for complete disaster.

✘ D. Angry and overcome by emotions.

Question ID : **481843882**
Status : **Answered**
Chosen Option : **A**

Q.11 Fill in the blank with the most appropriate choice.

Back then, the _____ of the criminals was often matched by the corruption of the police.

Ans

✔ A. venality

✘ B. enmity

✘ C. vanity

✘ D. vivacity

Question ID : **481843886**
Status : **Not Answered**
Chosen Option : **--**

Q.12 The question below consist of a set of labelled sentences. Out of four options given, select the most logical order of the sentences which form a paragraph.

The Taj Mahal is located on the right bank of the Yamuna River in a vast Mughal garden that encompasses nearly 17 hectares, in the Agra District in Uttar Pradesh.

P. It was built by Mughal Emperor Shah Jahan in memory of his wife Mumtaz Mahal with construction starting in 1632 AD and completed in 1648 AD,
Q. The mosque, the guest house and the main gateway on the south, the outer courtyard and its cloisters were added subsequently and completed in 1653 AD.
R. The existence of several historical and Quranic inscriptions in Arabic script have facilitated setting the chronology of Taj Mahal.
S. For its construction, masons, stone-cutters, inlayers, carvers, painters, calligraphers, dome builders and other artisans were requisitioned from the whole of the empire and also from the Central Asia and Iran.

Ustad-Ahmad Lahori was the main architect of the Taj Mahal.

Ans

✘ A. SPQR

✘ B. RQPS

✘ C. SRQP

✔ D. PQRS

Question ID : **481843889**
Status : **Not Answered**
Chosen Option : **--**

Q.13 Select the most appropriate meaning of the given idiom.

Keep body and soul together

Ans

✗ A. To remain joyful in a tough situation.

✗ B. To understand the details.

✓ C. To earn a sufficient amount of money in order to keep yourself alive .

✗ D. A quick and automatic response.

Question ID : **481843883**
Status : **Answered**
Chosen Option : **D**

Q.14 A sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct speech.

The duty officer said, "It is unlikely that fulfilment of these criteria and conditions can be accomplished in less than 48 hours".

Ans

✗ A. The duty officer said that it is unlikely that fulfilment of those criteria and conditions can be accomplished in less than 48 hours.

✗ B. The duty officer said that was going to be unlikely that fulfilment of those criteria and conditions can be accomplished in less than 48 hours.

✗ C. The duty officer said that it would be unlikely that fulfilment of those criteria and conditions could be accomplished in less than 48 hours.

✓ D. The duty officer said that it was unlikely that fulfilment of those criteria and conditions could be accomplished in less than 48 hours.

Question ID : **481843891**
Status : **Answered**
Chosen Option : **D**

Q.15 A sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.

Every year there are hundreds and thousands of tourists visiting the Grand Canyon.

Ans

✗ A. The Grand Canyon is being visited by hundreds and thousands of tourists every year.

✗ B. The Grand Canyon had been visited by hundreds and thousands of tourists every year.

✗ C. The Grand Canyon has been visited by hundreds and thousands of tourists every year.

✓ D. The Grand Canyon is visited by hundreds and thousands of tourists every year.

Question ID : **481843892**
Status : **Answered**
Chosen Option : **A**

Section : **Reasoning**

Q.1 दिए गए विकल्पों में से तीन एक निश्चित तरीके से समान हैं। हालाँकि, एक विकल्प अन्य तीन की तरह **नहीं** है। उस विकल्प का चयन करें जो अन्य से अलग है।

Ans

✗ A. फूल के गर्भ केसर का सिरा (स्टिग्मा)

✗ B. पत्ती

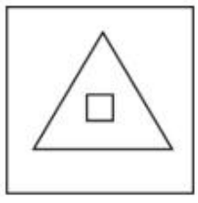
✓ C. फूल

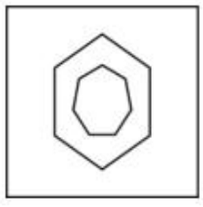
✗ D. बाह्यदलपुंज (फूल की पँखड़ी का भाग)

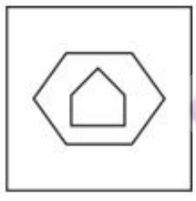
Question ID : **481843906**
Status : **Answered**
Chosen Option : **B**

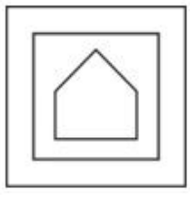
Q.2 Out of the given options, three are similar in a certain manner. However, one option is NOT like the other three. Select the option which is different from the rest.

Ans

✗ A. 

✗ B. 

✓ C. 

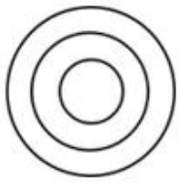
✗ D. 

Question ID : **481843898**
Status : **Not Answered**
Chosen Option : **--**

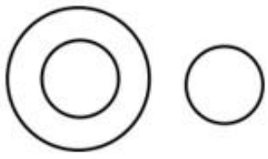
Q.3 Which of the following Venn diagrams best represents the relationship between Fathers, Brothers and Males?

Ans

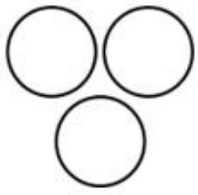
✗ A.



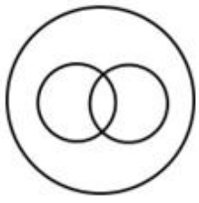
✗ B.



✗ C.

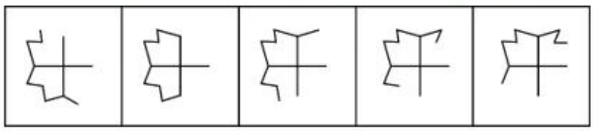


✓ D.



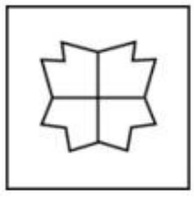
Question ID : **481843903**
Status : **Answered**
Chosen Option : **D**

Q.4 Which of the following answer figure completes the series of the question figure?

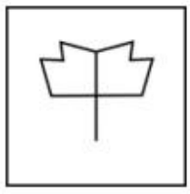


Ans

✗ A.

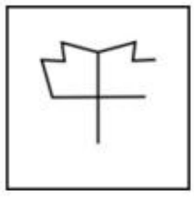


✓ B.



✗ C.

✗ D.



Question ID : **481843901**
Status : **Answered**
Chosen Option : **A**

Q.5 Select the option that is related to the third term on the same basis as the second term is related to the first term.

9 : 15 :: 13 : ?

Ans

✓ A. 23

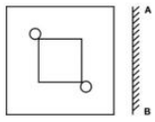
✗ B. 21

✗ C. 20

✗ D. 22

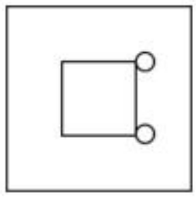
Question ID : **481843900**
Status : **Not Answered**
Chosen Option : **--**

Q.6 If a mirror is placed on the line AB, then which of the answer figures is the right image of the given figure?

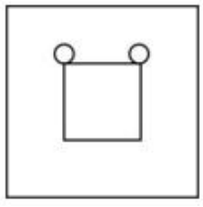


Ans

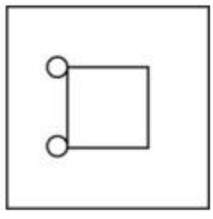
✗ A.



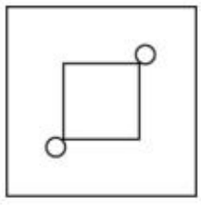
✗ B.



✗ C.

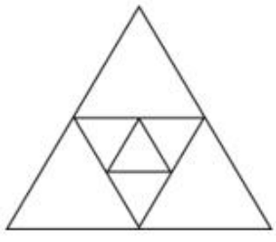


✓ D.



Question ID : **481843895**
Status : **Answered**
Chosen Option : **D**

Q.7 Find the number of triangles in the given figure.



Ans

✗ A. 8

✗ B. 10

✗ C. 7

✓ D. 9

Question ID : **481843902**
Status : **Answered**
Chosen Option : **D**

Q.8 In a certain code language if MERCURY is coded as REMCYRU, then what will NEPTUNE be coded as?

Ans

✗ A. NEPTENU

✓ B. PENTENU

✗ C. PENTUNE

✗ D. NPETEUN

Question ID : **481843899**
Status : **Answered**
Chosen Option : **B**

Q.9 Find the missing number from the series.

3, 6, ____, 36, 108

Ans

✗ A. 24

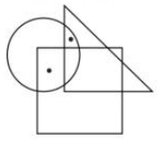
✗ B. 14

✗ C. 20

✓ D. 18

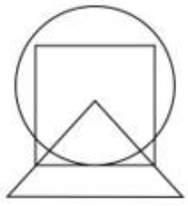
Question ID : **481843908**
Status : **Not Answered**
Chosen Option : **--**

Q.10 Which of the following figure satisfies the same conditions of placement of the dots as in the question figure?

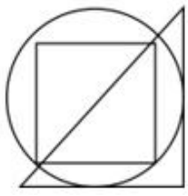


Ans

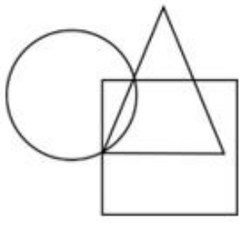
✗ A.



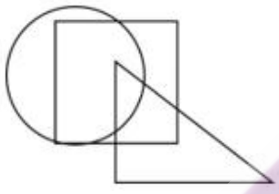
✓ B.



✗ C.



✗ D.



Question ID : **481843907**
Status : **Answered**
Chosen Option : **B**

Q.11 How many times does 7 come between 1 to 100?

Ans

✗ A. 18

✗ B. 19

✗ C. 17

✓ D. 20

Question ID : **481843904**
Status : **Answered**
Chosen Option : **D**

Q.12 Find the greatest three-digit number which is a multiple of 8.

Ans

✗ A. 984

✓ B. 992

✗ C. 998

✗ D. 989

Question ID : **481843905**
Status : **Answered**
Chosen Option : **B**

Q.13 The six-digit number 12334A is divisible by 9, where A is a single-digit whole number. Find the minimum value of A.

Ans

✗ A. 4

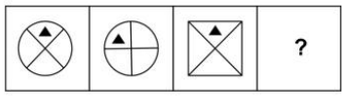
✗ B. 3

✗ C. 6

✓ D. 5

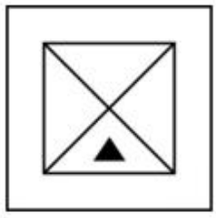
Question ID : **481843896**
Status : **Answered**
Chosen Option : **D**

Q.14 Select the option that is related to the third image on the same basis as the second image is related to the first image.

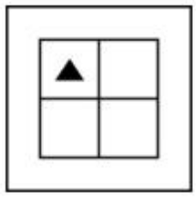


Ans

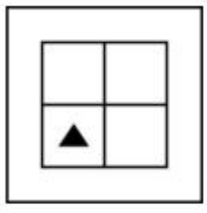
✗ A.



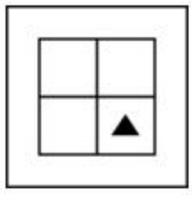
✓ B.



✗ C.

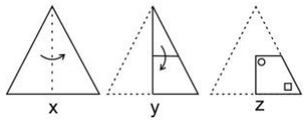


✗ D.



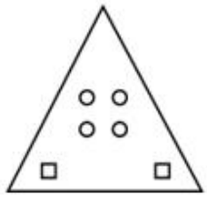
Question ID : **481843894**
Status : **Answered**
Chosen Option : **B**

Q.15 A paper is folded and punched as shown in the figure. Choose the figure which closely resembles the unfolded form of figure Z.

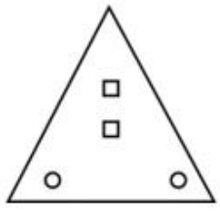


Ans

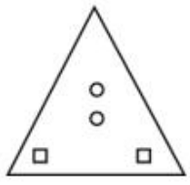
✔ A.



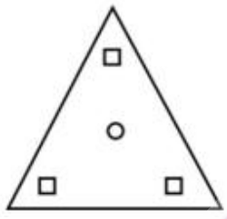
✘ B.



✘ C.



✘ D.



Question ID : **481843897**
Status : **Answered**
Chosen Option : **A**

Section : **Quantitative Aptitude**

Q.1 **20, 30, 40 and 50 are four numbers. Which of the following is the greatest four digit number that can be divided by all the four mentioned numbers?**

Ans

✔ A. 9600

✘ B. 9000

✘ C. 9660

✘ D. 9960

Question ID : **481843917**
Status : **Answered**
Chosen Option : **A**

Q.2 **A train is moving towards a pole and a stationery man. The speed of the train is 20 m/sec. The train crosses the pole at 12:05 and crosses the man at 12:06, what is the distance between the pole and the man?**

Ans

✗ A. 12.2 km

✗ B. 120 m

✓ C. 1.2 km

✗ D. 12 km

Question ID : **481843922**
Status : **Answered**
Chosen Option : **C**

Q.3 **A car can cover 80 km in 10 litres of petrol. What amount of distance will the car cover in 15 litres of petrol?**

Ans

✓ A. 120 km

✗ B. 110 km

✗ C. 100 km

✗ D. 130 km

Question ID : **481843919**
Status : **Answered**
Chosen Option : **A**

Q.4 **A scheme promises to double your money in 12 years under a certain rate of interest compounded annually. If the same rate of interest is guaranteed under simple interest on a deposit of Rs. 10,000 for 12 years, how much interest do you stand to earn at the end of 12 years?**

Ans

✗ A. Rs. 3,600

✗ B. Rs. 72,000

✓ C. Rs. 7,200

✗ D. Rs. 36,000

Question ID : **481843924**
Status : **Not Answered**
Chosen Option : **--**

Q.5 The total number of cars among the three given companies is 10,000. Maruti comprises 30% of it, Toyota has 40% of it and the rest is constituted by Honda. What is the absolute difference between the number of Honda sedan cars and Toyota SUV cars?

Type of car	Name of company		
	Toyota	Honda	Maruti
Sedan	30%	30%	25%
SUV	40%	20%	50%
Hatchback	30%	50%	25%

Ans

✗ A. 1200

✗ B. 1300

✓ C. 700

✗ D. 600

Question ID : **481843916**
Status : **Answered**
Chosen Option : **C**

Q.6 x = .46464646..... निम्नलिखित में से किसे x से गुणा करने पर पूर्णांक प्राप्त होगा?

Ans

✔ A. 99

✘ B. 999

✘ C. 1000

✘ D. 100

Question ID : **481843918**
Status : **Answered**
Chosen Option : **B**

Q.7 Two numbers x and y are in the ratio 2 : 3. If 5 is added to x and 10 is added to y, the ratio of x : y becomes 9 : 16. Which among the following can be a possible value of x?

Ans

✘ A. 2

✔ B. 4

✘ C. 1

✘ D. 3

Question ID : **481843910**
Status : **Answered**
Chosen Option : **B**

Q.8 What is the value of .05 × .0090?

Ans

✔ A. 45 × 10^ -5

✘ B. 45 × 10^ -6

✘ C. 45 × 10^ -3

✘ D. 45 × 10^ -4

Question ID : **481843925**
Status : **Answered**
Chosen Option : **A**

Q.9 An organisation pays Rs. 50 for regular work hours and Rs. 80 per hour of overtime. If an employee is known to have worked 30 regular hours and 10 overtime hours, what is his total income?

Ans

✘ A. Rs. 2600

✘ B. Rs. 2000

✘ C. Rs. 2400

✔ D. Rs. 2300

Question ID : **481843927**
Status : **Answered**
Chosen Option : **D**

Q.10 **If Aman can finish 1/5th of the work in a day, what part of the work will he complete in 3 days?**

Ans

✗ A. 80%

✗ B. 40%

✗ C. 20%

✓ D. 60%

Question ID : **481843920**
Status : **Answered**
Chosen Option : **D**

Q.11 **If x^2 - 3x + 2 = 0, what is the sum of the roots of this equations? (The sign '^' means 'to the power')**

Ans

✓ A. 3

✗ B. 3/2

✗ C. 4

✗ D. 2

Question ID : **481843926**
Status : **Answered**
Chosen Option : **A**

Q.12 **The average monthly salary of Sailesh is Rs. 75,000 for 12 months (from January to December). If the salary that he receives in January and February is removed, the average salary falls by 15,000. What is the average of the salaries received in January and February?**

Ans

✗ A. Rs. 75,000

✓ B. Rs. 1,50,000

✗ C. Rs. 3,00,000

✗ D. Rs. 2,25,000

Question ID : **481843914**
Status : **Answered**
Chosen Option : **B**

Q.13 **यदि समकोण त्रिभुज की भुजाएँ पूर्णांक हैं और कर्ण की लंबाई 13 cm है, तो त्रिभुज का परिमाप क्या है?**

Ans

✗ A. 25 cm

✓ B. 30 cm

✗ C. 18 cm

✗ D. 17 cm

Question ID : **481843913**
Status : **Answered**
Chosen Option : **B**

Q.14 **What is the value of z if z = {(.9)^3 - (.8)^3}\ (.9^2 + .72 + .8^2) (The sign '^' means 'to the power')?**

Ans

✗ A. 0.2

✗ B. 0.15

✗ C. 0.05

✓ D. 0.1

Question ID : **481843911**
Status : **Answered**
Chosen Option : **D**

Q.15 **If a certain amount of money yields Rs. 1250 interest under simple interest at 5% interest in 2 years, what is the amount?**

Ans

✗ A. Rs. 25,000

✓ B. Rs. 12,500

✗ C. Rs. 1,25,000

✗ D. Rs. 2,50,000

Question ID : **481843915**
Status : **Answered**
Chosen Option : **B**

Q.16 **By how much is 4/8 less than 8/9?**

Ans

✗ A. 6/19

✓ B. 7/18

✗ C. 6/18

✗ D. 7/19

Question ID : **481843923**
Status : **Answered**
Chosen Option : **B**

Q.17 **If x = 234^48 × 522^35, what is the units digit of the resulting number? (The sign '^' means 'to the power')**

Ans

✗ A. 4

✗ B. 6

✓ C. 8

✗ D. 2

Question ID : **481843912**
Status : **Answered**
Chosen Option : **C**

Q.18 यदि 'a' और 'b' दो सबसे छोटी धनात्मक अभाज्य संख्याएँ हैं, तो उनके लघुत्तम समापवर्तक और महत्तम समापवर्तक के अंतर के बीच क्या अंतर है?

Ans
- ✗ A. 0
- ✓ B. 5
- ✗ C. 6
- ✗ D. 1

Question ID : **481843928**
Status : **Answered**
Chosen Option : **D**

Q.19 If the roots of the quadratic equation x^2 + px + q = 0 are 2 and 4, what is the sum of p and q (the sign '^' means 'to the power')?

Ans
- ✗ A. 6
- ✓ B. 2
- ✗ C. 8
- ✗ D. -2

Question ID : **481843909**
Status : **Answered**
Chosen Option : **B**

Q.20 A shopkeeper has 5 dozens of apples. On selling 12 apples for Rs. 600, he incurs a loss equivalent to the cost price of 2 apples. At what price should he mark the remaining 4 dozens of apples so that even after giving a discount of 20%, he would have an overall gain of 10%?

Ans
- ✗ A. Rs. 3960
- ✗ B. Rs. 4500
- ✗ C. Rs. 3600
- ✓ D. Rs. 4200

Question ID : **481843921**
Status : **Not Answered**
Chosen Option : **--**

Section : **Electrical Engineering**

Q.1 Which of the following options for the role of a generator in a power system is CORRECT?

Ans
- ✗ A. It converts mechanical energy into nuclear energy
- ✗ B. It converts electrical energy into mechanical energy.
- ✓ C. It converts mechanical energy into electrical energy.
- ✗ D. It converts mechanical energy into thermal energy.

Question ID : **4818431039**
Status : **Answered**
Chosen Option : **C**

Q.2 The core of a three-phase, 50 Hz, 1000/400 V delta/star: 300 KVA core type transformer operated with a flux of 0.04 wb. Find the EMF per turn.

Ans

✔ A. 8.88 V

✘ B. 5.5 V

✘ C. 6 V

✘ D. 11.2 V

Question ID : **4818431022**
Status : **Answered**
Chosen Option : **B**

Q.3 The _____ is numerically equal to the induced EMF in one coil due to unit rate of change of current in the other coil.

Ans

✘ A. coefficient of statically self-induced EMF

✘ B. coefficient of dynamically self-induced EMF

✔ C. coefficient of mutual induction

✘ D. coefficient of coupling

Question ID : **481843933**
Status : **Answered**
Chosen Option : **C**

Q.4 Which of the following statements about voltage amplifiers is INCORRECT?

Ans

✘ A. It provides voltage output proportional to the voltage input

✘ B.

If the input resistance is large as compared with the source resistance, then V_i (input voltage) = V_s (source voltage).

✔ C. In this circuit, the proportionality factor depends on the magnitude of the source and load resistance.

✘ D.

If the load resistance is large as compared with the output resistance, then $V_o = A_v V_i$.

Question ID : **4818431028**
Status : **Answered**
Chosen Option : **C**

Q.5 Which of the following statements about electromotive force (EMF) is INCORRECT?

Ans

✘ A. It is the voltage difference between the two terminals of a source in open circuit.

✘ B. It is the work done per unit charge by the source in taking the charge from lower to higher potential energy.

✔ C. It is the work done per unit charge by the source in taking the charge from higher to lower potential energy.

✘ D. EMF is not a force.

Question ID : **481843988**
Status : **Answered**
Chosen Option : **C**

Q.6 **Ampere hour meter is a/an:**

Ans

✗ A. recording instrument

✗ B. compound instrument

✗ C. indicating instrument

✓ D. integrating instrument

Question ID : **481843951**
Status : **Answered**
Chosen Option : **C**

Q.7 **_____ दी गई ऊर्जा और आकार के कक्षीय अंतरिक्ष में पसंदीदा अभिविन्यास निर्दिष्ट करती है।**

Ans

✗ A. प्रचक्रण क्वांटम संख्या

✗ B. सिद्धांत क्वांटम संख्या

✓ C. चुंबकीय क्वांटम संख्या

✗ D. दिगंशी क्वांटम संख्या

Question ID : **481843969**
Status : **Answered**
Chosen Option : **D**

Q.8 **Which of the following statements about magnetostriction and its ill effects is INCORRECT?**

Ans

✗ A. The transformer buzzing noise is caused by a phenomenon of magnetostriction.

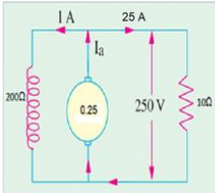
✗ B. The applied magnetic field changes the magnetostrictive strain until reaching its saturation value.

✗ C. This effect causes losses which produce heat in ferromagnetic cores.

✓ D. Using a low value of flux density core is one of the reasons for humming sound in a transformer.

Question ID : **481843959**
Status : **Answered**
Chosen Option : **B**

Q.9 780 वेव-कनेक्टेड आर्मेचर चालकों से युक्त और 600 rpm पर चल रहा एक 8-ध्रुवीय डीसी शंट जनरेटर 50 V के टर्मिनल वोल्टेज पर 10 Ω प्रतिरोध का भार प्रदान करता है। आर्मेचर प्रतिरोध 0.25 Ω है और क्षेत्र प्रतिरोध 200 Ω है। आर्मेचर धारा ज्ञात कीजिए।



Ans

✔ A. 26.25 A

✘ B. 22.25 A

✘ C. 24.25 A

✘ D. 20.25 A

Question ID : **4818431014**
Status : **Answered**
Chosen Option : **A**

Q.10 Calculation of capacitances between line conductors and between conductor to neutral or earth is NOT based on:

Ans

✘ A. the electric field strength

✔ B. the magnetic flux lines and partial potential lines

✘ C. the total charge with the potential difference

✘ D. the potential difference between conductors

Question ID : **481843971**
Status : **Answered**
Chosen Option : **B**

Q.11 At what value of load angle (δ) does the maximum power transfer in a power system?

Ans

✘ A. δ = 180°

✘ B. δ > 90°

✔ C. δ = 90°

✘ D. δ < 90°

Question ID : **4818431042**
Status : **Answered**
Chosen Option : **C**

Q.12 What effect does the proportional parameter of control response have on the rise time in a closed-loop control system?

Ans

✔ A. It decreases

✘ B. It eliminates

✘ C. No changes

✘ D. It increases

Question ID : **4818431044**
Status : **Answered**
Chosen Option : **A**

Q.13 A single-phase transformer has 300 primary and 900 secondary turns. The net cross-section area of the core is 50 cm^2. If the primary winding is connected to a 50 Hz supply at 480 V, calculate the voltage induced in the secondary winding.

Ans

✔ A. 1440 V

✘ B. 550 V

✘ C. 1000 V

✘ D. 1200 V

Question ID : **4818431021**
Status : **Answered**
Chosen Option : **A**

Q.14 What is the typical value of open-loop voltage gain, AVOL, for a 741 op-amp?

Ans

✘ A. More than 50,000

✔ B. More than 2,00,000

✘ C. More than 10,000

✘ D. More than 1,00,000

Question ID : **4818431033**
Status : **Answered**
Chosen Option : **A**

Q.15 The ratio of the total number of lumens reaching the working plane to the total number of lumens emitting from source is known as:

Ans

✘ A. waste light factor

✘ B. absorption factor

✔ C. coefficient of utilisation

✘ D. coefficient of illumination

Question ID : **481843965**
Status : **Answered**
Chosen Option : **C**

Q.16 In the context of power generation, MHD stands for:

Ans

✔ A. Magneto Hydro Dynamic

✘ B. Magnetic Hydraulic Dynamic

✘ C. Magneto Hydro Dimension

✘ D. Magnetic Hydraulic Dimension

Question ID : **4818431025**
Status : **Answered**
Chosen Option : **A**

Q.17 Which of the following points about the RMS value is INCORRECT?

Ans

✔ A. The heat produced due to AC is proportional to the RMS value of the current.

✘ B. The RMS value can be determined by graphical method.

✘ C. The ammeters and voltmeters record the RMS values of current and voltage, respectively.

✘ D. In case of alternating quantities, the RMS values are used for specifying the magnitude of alternating quantities.

Question ID : **481843948**
Status : **Answered**
Chosen Option : **B**

Q.18 Calculate the synchronous speed of a 3-phase induction motor, if poles and frequency are given as 6 and 60 Hz, respectively.

Ans

✘ A. 1000 rpm

✘ B. 1400 rpm

✘ C. 1100 rpm

✔ D. 1200 rpm

Question ID : **4818431008**
Status : **Answered**
Chosen Option : **D**

Q.19 A 4-pole, long shunt lap wound generator supplies 20 kW at a terminal voltage of 400 V. The armature resistance is 0.02 Ω, series field resistance is 0.04 Ω and shunt field resistance is 100 Ω. The brush drop may be taken as 1.0 V. Determine the induced EMF.

Ans

✔ A. 405.24 V

✘ B. 400 V

✘ C. 380 V

✘ D. 505 V

Question ID : **4818431016**
Status : **Answered**
Chosen Option : **A**

Q.20 Which of the following types of damping is used in a permanent magnet moving coil instrument?

Ans

✘ A. Air friction damping

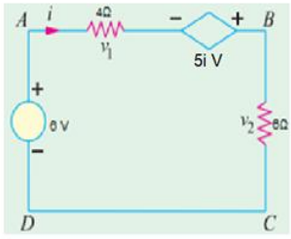
✔ B. Eddy current damping

✘ C. Electromagnetic damping

✘ D. Fluid friction damping

Question ID : **4818431038**
Status : **Answered**
Chosen Option : **B**

Q.21 दिए गए परिपथ में, जिसमें एक धारा-आश्रित वोल्टता स्रोत है, आश्रित स्रोत की वोल्टता क्या है?



Ans

A. 8 V

B. 6 V

C. 5 V

D. 7.2 V

Question ID : **4818431002**
Status : **Answered**
Chosen Option : **D**

Q.22 **A current of 10 A is passing along a straight wire. Now, the wire is bent to form a loop. What should be the diameter of the loop such that the force produced at its centre will be the same as the force produced by the straight conductor at a distance of 0.1 m?**

Ans

A. 1 m

B. 1.63 m

C. 1.5 m

D. 0.63 m

Question ID : **4818431005**
Status : **Answered**
Chosen Option : **B**

Q.23 **You have a 2 milliampere meter movement with a coil resistance of 1000 ohms. When 2 milliampere is flowing through the meter coil and is causing FSD, what will be the voltage developed across the coil resistance?**

Ans

A. 2 V

B. 0.5 V

C. 1 V

D. 1.5 V

Question ID : **4818431046**
Status : **Answered**
Chosen Option : **D**

Q.24 A lead wire and an iron wire are connected in parallel. Their respective specific resistances are in the ratio 40 : 20. The former carries 80% more current than the latter, and the latter is 45% longer than the former. Determine the ratio of their cross-sectional areas.

Ans

✗ A. 0.3

✓ B. 0.4

✗ C. 0.6

✗ D. 0.5

Question ID : **481843995**
Status : **Answered**
Chosen Option : **B**

Q.25 Which of the following statements about semiconductors is INCORRECT?

Ans

✗ A. The most commonly used semiconductor materials are germanium and silicon

✗ B. Current carriers are free electrons and holes in semiconductors.

✓ C. It is a substance whose conductivity lies between a metal and a conductor.

✗ D. The width of the forbidden band of semiconductors is relatively small.

Question ID : **481843970**
Status : **Answered**
Chosen Option : **C**

Q.26 Which of the following is the CORRECT representation of transconductance?

Ans

✓ A. $G_M = I/V_i$

✗ B. $G_M = V/V_i$

✗ C. $G_M = I/I_i$

✗ D. $G_M = V/I_i$

Question ID : **4818431029**
Status : **Answered**
Chosen Option : **A**

Q.27 Which of the following controllers improves the transient response of a system?

Ans

✗ A. The proportional controller

✗ B. The proportional and integral controllers

✗ C. The integral controller

✓ D. The derivative controller

Question ID : **4818431045**
Status : **Answered**
Chosen Option : **C**

Q.28 Which of the following statements about the nature of speed control required by different industrial drives is INCORRECT?

Ans

✔ A. Some drives require only one fixed speed over a region; such drives are called mono-speed drives.

✘ B. Some drives require continuously variable speed over the range from zero to full speed; such drives are called variable speed drives.

✘ C. Some drives require only two or three fixed speeds over a region; such drives are called multi-speed drives.

✘ D. In some cases, speed is needed for adjusting the work on a driven machine only for a few revolutions per minute; such a speed is known as creeping speed.

Question ID : **481843966**
Status : **Answered**
Chosen Option : **B**

Q.29 _____ method is used for heating in the production of steel.

Ans

✘ A. Indirect arc heating

✘ B. Direct induction heating

✔ C. Direct arc heating

✘ D. Infrared heating

Question ID : **481843964**
Status : **Answered**
Chosen Option : **A**

Q.30 Which of the following is NOT the advantage of bundled conductors?

Ans

✘ A. Improved voltage regulation

✘ B. Reduced interferences with communication circuits

✘ C. Reduced corona loss due to larger cross-sectional area

✔ D. Reduced clearance requirements at structures

Question ID : **481843963**
Status : **Answered**
Chosen Option : **A**

Q.31 According to the latest practice, the approximate land required for a 220 kV substation is:

Ans

✘ A. 50 acres

✔ B. 25 acres

✘ C. 10 acres

✘ D. 70 acres

Question ID : **481843983**
Status : **Answered**
Chosen Option : **B**

Q.32 The clearance above ground for EHV lines shall NOT be less than:

Ans
- ✗ A. 4.6 m
- ✗ B. 6.3 m
- ✗ C. 5.4 m
- ✓ D. 5.2 m

Question ID : **481843985**
Status : **Answered**
Chosen Option : **D**

Q.33 What is the value of crest for sinusoidal AC only?

Ans
- ✗ A. 0.309
- ✓ B. 1.414
- ✗ C. 1.11
- ✗ D. 0.707

Question ID : **4818431011**
Status : **Answered**
Chosen Option : **B**

Q.34 Torques are associated with synchronous motor; which of the following torques is also known as breakaway torque?

Ans
- ✓ A. Starting torque
- ✗ B. Pull in torque
- ✗ C. Running torque
- ✗ D. Pull out torque

Question ID : **4818431035**
Status : **Answered**
Chosen Option : **C**

Q.35 A closed-loop control system is also known as _____.

Ans
- ✓ A. feedback control system
- ✗ B. forward control system
- ✗ C. backward control system
- ✗ D. reverse control system

Question ID : **4818431047**
Status : **Answered**
Chosen Option : **A**

Q.36 Which of the following is the direct method of network analysis?

Ans
- ✔ A. Reciprocity theorem
- ✘ B. Thevenin's theorem
- ✘ C. Star/delta conversion
- ✘ D. Norton's theorem

Question ID : **481843934**
Status : **Answered**
Chosen Option : **C**

Q.37 In phasor representation of an alternating quantity, the sinusoidally varying alternating quantity can be represented graphically by:

Ans
- ✘ A. zigzag form
- ✔ B. a straight line with an arrow
- ✘ C. hyperbolic linear form
- ✘ D. a line defining variable points is some distance

Question ID : **481843949**
Status : **Answered**
Chosen Option : **B**

Q.38 Which of the following signals are continuous and can vary in wide range of values?

Ans
- ✘ A. Domain signals
- ✘ B. Digital signals
- ✘ C. Discrete signals
- ✔ D. Analogue signals

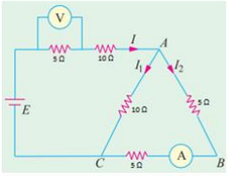
Question ID : **481843967**
Status : **Answered**
Chosen Option : **A**

Q.39 Which of the following is the dimension of electrical conductivity?

Ans
- ✘ A. $[M L^3 T^{-3} A^{-2}]$
- ✘ B. $[M L^2 T^{-3} A^{-1}]$
- ✔ C. $[M^{-1} L^{-3} T^3 A^2]$
- ✘ D. $[L T^{-1}]$

Question ID : **481843991**
Status : **Answered**
Chosen Option : **B**

Q.40 A battery of unknown EMF is connected across resistances as shown in the given figure. The voltage drop across the 5 Ω resistors is 15 V. What is the EMF of the battery?

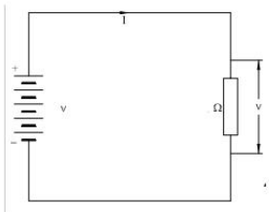


Ans

- ✗ A. 50 V
- ✗ B. 30 V
- ✗ C. 40 V
- ✓ D. 60 V

Question ID : **4818431000**
Status : **Answered**
Chosen Option : **C**

Q.41 In the given circuit, find the current through the conductor having a source of 50 V battery and a load of 5-ohm resistance.



Ans

- ✓ A. 10 A
- ✗ B. 12 A
- ✗ C. 20 A
- ✗ D. 15 A

Question ID : **4818431036**
Status : **Answered**
Chosen Option : **A**

Q.42 An 8-pole, 3-phase alternator driver at a speed of 750 rpm supplies power to a 6-pole, 3-phase induction motor. If the slip of the motor at full load is 2%, calculate the full load speed of the motor.

Ans

- ✗ A. 600 rpm
- ✗ B. 800 rpm
- ✗ C. 1200 rpm
- ✓ D. 980 rpm

Question ID : **4818431019**
Status : **Answered**
Chosen Option : **B**

Q.43 Which of the following statements about the transformer or mechanical gear drive is INCORRECT?

Ans

✗ A. In mechanical gear drive, there is a perfect ratio between the number of teeth and the speeds of the two gears.

✓ B. Mechanical gear drive transfers mechanical power from one joint to another.

✗ C. Transformer transfers electrical power from one circuit to the other.

✗ D. Power is transferred through the magnetic flux in transformer.

Question ID : **481843957**
Status : **Answered**
Chosen Option : **D**

Q.44 Which of the following methods utilises a vane mounted on the spindle of the moving system? The vane is of thin aluminium sheet and moves in a closed sector-shaped box?

Ans

✗ A. Fluid friction damping

✗ B. Eddy current damping

✗ C. Final oscillation damping

✓ D. Air friction damping

Question ID : **481843954**
Status : **Answered**
Chosen Option : **A**

Q.45 Which of the following statements about the stacking factor in magnetic circuits is FALSE?

Ans

✗ A. It is important in calculating flux densities in magnetic parts.

✗ B. It is usually less than 1.0; it approaches 1.0 as the lamination thickness increases.

✗ C. The ratio of effective area of the overall area is called the stacking factor.

✓ D. It is also defined as the ratio of the total volume of the core to the volume occupied by magnetic material.

Question ID : **481843938**
Status : **Answered**
Chosen Option : **C**

Q.46 Which of the following winding is mostly suitable for low voltage (11 kV to 33 kV) windings of large transformers?

Ans

✓ A. Helical winding

✗ B. Continuous disc winding

✗ C. Crossover winding

✗ D. Spiral winding

Question ID : **481843955**
Status : **Answered**
Chosen Option : **A**

Q.47 Which of the following terms is responsible for noise measurement in the PID controller?

Ans

✗ A. The integral term

✗ B. Both proportion-integral

✗ C. The proportional term

✓ D. The derivative term

Question ID : **4818431043**
Status : **Answered**
Chosen Option : **B**

Q.48 Which of the following is NOT one of the properties of transfer function?

Ans

✗ A. All initial conditions of the system are set to zero.

✗ B. The transfer function is dependent on the input of the system .

✗ C. It is defined only for a linear time-invariant system.

✓ D. The transfer function between an input variable and an output variable of a system is defined as the Laplace transform of the impulse response.

Question ID : **481843976**
Status : **Answered**
Chosen Option : **D**

Q.49 Which of the following laws states that the algebraic sum of EMFs around a closed loop equals the algebraic sum of IR drops around the loop?

Ans

✓ A. Kirchhoff's voltage law

✗ B. Kirchhoff's junction rule

✗ C. Kirchhoff's first law

✗ D. Kirchhoff's current law

Question ID : **481843947**
Status : **Answered**
Chosen Option : **A**

Q.50 Which of the following statements about the closed-loop control system compared to open-loop control system is INCORRECT?

Ans

✗ A. The feedback reduces the overall gain of the system.

✓ B. Stability is not a major problem, and less care is needed to design a stable close-loop system.

✗ C. The changes in the output due to external disturbances are corrected automatically. So, they are less sensitive to noise and other disturbances.

✗ D. The closed-loop systems are accurate and reliable.

Question ID : **481843975**
Status : **Answered**
Chosen Option : **B**

Q.51 Which of the following statements about the Wien Bridge Oscillator is CORRECT?

Ans

✗ A. Op-amp is used in inverting mode.

✗ B. Op-amp circuit is introduced in 180° phase shift.

✓ C. Feedback network is lead-lag network.

✗ D. The amplifier gain condition is |A|≥29.

Question ID : **4818431031**
Status : **Answered**
Chosen Option : **B**

Q.52 An 800 pF capacitor is charged by a 100 V battery. How much electrostatic energy is stored by the capacitor?

Ans

✗ A. 4.5×10^{-12} J

✗ B. 6.5×10^{-8} J

✗ C. 9.5×10^{-6} J

✓ D. 4×10^{-6} J

Question ID : **481843992**
Status : **Answered**
Chosen Option : **D**

Q.53 Which of the following is NOT the advantage of R-C phase shift oscillator?

Ans

✗ A. It is a fixed frequency oscillator.

✓ B. By changing the value of R and C, the frequency of the oscillator can be changed.

✗ C. The circuit is simple to design.

✗ D. It can produce output over the audio frequency range.

Question ID : **4818431030**
Status : **Answered**
Chosen Option : **B**

Q.54 A coil consists of 4000 turns of copper wire having a cross-sectional area of 0.6 mm^2. The mean length per turn is 60 cm, and the resistivity of copper is 0.04 μΩ m. Find the power absorbed by the coil when connected across a 110 V DC supply.

Ans

✗ A. 302.5 W

✗ B. 80.5 W

✓ C. 75.6 W

✗ D. 66.6 W

Question ID : **4818431003**
Status : **Answered**
Chosen Option : **B**

Q.55 Reluctance (S) of a magnetic circuit is given as:

Ans

✗ A. S = μA

✓ B. S = l/μA

✗ C. S = l*μA

✗ D. S = μA/l

Question ID : **4818431009**
Status : **Answered**
Chosen Option : **B**

Q.56 In a two-diode full wave rectifier, with a load current requirement of 4.2 A, what should be the current ratings of the diodes used?

Ans

✗ A. 1.5 A

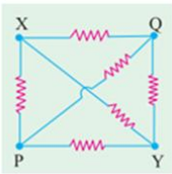
✓ B. 2.1 A

✗ C. 1 A

✗ D. 4.1 A

Question ID : **481843989**
Status : **Answered**
Chosen Option : **A**

Q.57 In the given circuit, if all the resistances are of 10 ohms, then calculate the equivalent resistance between XY diagonal points.



Ans

✓ A. 5 Ω

✗ B. 7.5 Ω

✗ C. 2.5 Ω

✗ D. 10 Ω

Question ID : **481843998**
Status : **Answered**
Chosen Option : **B**

Q.58 Which of the following is the symbol of current density?

Ans

✗ A. μ

✗ B. Σ

✓ C. J

✗ D. R

Question ID : **481843990**
Status : **Answered**
Chosen Option : **C**

Q.59 Which of the following statements about the time-invariant and time-varying control systems is INCORRECT?

Ans

✔ A. The characteristics of time-varying control system change with time and the coefficients of its differential equation are variable coefficient.

✘ B. A time-invariant control system is one in which the parameters of the system are stationary with respect to time during the operation of the system.

✘ C. The characteristics of time-invariant control system do not change with time, and it can be represented by constant coefficient differential equations.

✘ D. A time-varying control system is one in which the parameters of the system are not stationary with respect to time during the operation of the system.

Question ID : **481843977**
Status : **Answered**
Chosen Option : **D**

Q.60 Which of the following statements about LED is INCORRECT?

Ans

✘ A. It needs large power for operation.

✘ B. It emits light.

✘ C. It uses materials like gallium and arsenide.

✔ D. It uses materials like silicon and germanium.

Question ID : **4818431027**
Status : **Answered**
Chosen Option : **A**

Q.61 In which of the following circuits is the total voltage drop equal to the sum of the voltage drops in various elements of the circuits?

Ans

✘ A. Series resistance circuit

✘ B. Parallel magnetic circuit

✘ C. Series magnetic circuit

✔ D. Series electric circuit

Question ID : **481843942**
Status : **Answered**
Chosen Option : **D**

Q.62 The stator of a 3-phase induction motor has 4 slots per pole phase. If the supply frequency is 50 Hz, calculate the number of stator poles produced and the total number of slots on the stator, respectively.

Ans

✔ A. 8 poles and 96 slots

✘ B. 8 poles and 54 slots

✘ C. 6 poles and 54 slots

✘ D. 6 poles and 96 slots

Question ID : **4818431017**
Status : **Answered**
Chosen Option : **C**

Q.63 The reluctance offered by the magnetic circuit or a part of magnetic circuit does NOT depend upon the:

Ans

✗ A. nature of the magnetic material

✓ B. deteriorated flux of the magnetic circuit

✗ C. length of the magnetic flux path in the part of the magnetic circuit

✗ D. cross-section area of the material through which the flux is passing

Question ID : **481843935**
Status : **Answered**
Chosen Option : **C**

Q.64 A conductor of length 1 m moves at right angles to a uniform magnetic field of flux density 2 Wb/m^2 with a velocity of 60 m/s. Calculate the EMF induced in it.

Ans

✗ A. 240 V

✗ B. 440 V

✗ C. 100 V

✓ D. 120 V

Question ID : **4818431010**
Status : **Answered**
Chosen Option : **B**

Q.65 The regulation of the alternator for a power factor of 0.8 lagging is:

Ans

✓ A. greater than that at unity power factor

✗ B. smaller than that at unity power factor

✗ C. similar to unity power factor

✗ D. not possible

Question ID : **481843961**
Status : **Answered**
Chosen Option : **B**

Q.66 The maximum flux density in the core of a 200/2000 V, 50 Hz single-phase transformer is 1.2 wb/m^2. If the EMF per turn is 10 V, determine the primary and secondary turns, respectively.

Ans

✗ A. 10, 1000

✓ B. 20, 200

✗ C. 40, 400

✗ D. 30, 300

Question ID : **4818431020**
Status : **Answered**
Chosen Option : **B**

Q.67 In an AC machine, the value of the voltage generated does NOT depend upon:

Ans

✗ A. the number of turns in the coil

✓ B. the induced current

✗ C. the strength of the field

✗ D. the speed at which the coil or magnetic field rotates

Question ID : **4818431048**
Status : **Answered**
Chosen Option : **B**

Q.68 In the _____, there is a metal cap at the top and a metal pin underneath, and to form a string, the cap is so recessed that it can take the pin of another unit.

Ans

✗ A. Hewlett type insulator

✗ B. strain insulator

✓ C. cemented cap type insulator

✗ D. pin type insulator

Question ID : **481843973**
Status : **Answered**
Chosen Option : **A**

Q.69 When a synchronous motor is over excited, the drawn power factor current will be:

Ans

✓ A. leading

✗ B. zero

✗ C. lagging

✗ D. unity

Question ID : **4818431034**
Status : **Answered**
Chosen Option : **A**

Q.70 Calculate the resistance of an 800 m long cable composed of 16 strands of similar copper conductors, each strand being 1.2 mm in diameter. Allow 4% increase in length for the 'lay' (twist) of each strand in completed cable. The resistivity of copper may be taken as $1.32 \times 10^{-8}\ \Omega$ m.

Ans

✓ A. $0.6\ \Omega$

✗ B. $0.3\ \Omega$

✗ C. $0.4\ \Omega$

✗ D. $0.2\ \Omega$

Question ID : **481843994**
Status : **Answered**
Chosen Option : **B**

Q.71 In which of the following types of elements are the electric charges stored for a prescribed duration of time?

Ans

✗ A. Resistor

✗ B. Voltage source

✗ C. Inductor

✓ D. Capacitor

Question ID : **481843929**
Status : **Answered**
Chosen Option : **D**

Q.72 Tangent galvanometer and Rayleigh current balance are examples of:

Ans

✗ A. secondary instruments

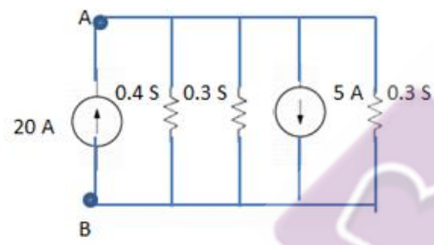
✗ B. power instruments

✗ C. instruments of industries

✓ D. absolute instruments

Question ID : **481843950**
Status : **Answered**
Chosen Option : **C**

Q.73 In the given circuit, what is the potential difference between points A and B?



Ans

✗ A. 12 V

✓ B. 15 V

✗ C. 10 V

✗ D. 5 V

Question ID : **481843999**
Status : **Answered**
Chosen Option : **D**

Q.74 If the alternator is over-excited and it delivers reactive power to the infinite bus, then under this condition:

Ans

✗ A. the alternator is operating at unity power factor

✗ B. the alternator is operating both at leading and lagging power factor

✗ C. the alternator is operating at leading power factor

✓ D. the alternator is operating at lagging power factor

Question ID : **481843960**
Status : **Answered**
Chosen Option : **C**

Q.75 The typical values of leakage factor are approximately from:

Ans

✗ A. 1.0 to 1.10

✓ B. 1.12 to 1.25

✗ C. 1.12 to 1.18

✗ D. 1.0 to 1.15

Question ID : **481843940**
Status : **Answered**
Chosen Option : **C**

Q.76 A 4-pole generator having wave wound armature winding has 60 slots, each slot containing 20 conductors. What will be voltage generated in the machine when driven at 1000 rpm assuming the flux per pole to be 5 mWb?

Ans

✗ A. 150 V

✗ B. 100 V

✗ C. 250 V

✓ D. 200 V

Question ID : **4818431015**
Status : **Answered**
Chosen Option : **D**

Q.77 "By the motion of the conductor or the coil in a magnetic field, i.e., the magnetic field is stationary and the moving conductors cut arrows it. The EMF generated in this way is normally called dynamically induced EMF."

The given statement is specified by which of the following laws?

Ans

✗ A. Kirchhoff's law

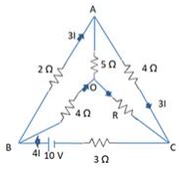
✗ B. Lenz's law

✗ C. Faraday's first law

✓ D. Faraday's second law

Question ID : **481843932**
Status : **Answered**
Chosen Option : **C**

Q.78 In the circuit shown in the following figure, calculate the value of the unknown resistance R when the current in branch OA is zero.



Ans

✗ A. 5 Ω

✗ B. 3 Ω

✓ C. 12 Ω

✗ D. 10 Ω

Question ID : **481843997**
Status : **Answered**
Chosen Option : **C**

Q.79 A 240 V, 4-pole wave wound DC series motor has 600 conductors on its armature; it has armature and series field resistance of 0.5 ohm. The motor takes a current of 30 A. Estimate its gross torque developed if it has a flux per pole of 25 mWb.

Ans

✗ A. 160 N-m

✗ B. 155.3 N-m

✗ C. 150 N-m

✓ D. 143.2 N-m

Question ID : **4818431013**
Status : **Answered**
Chosen Option : **D**

Q.80 Which of the following statements about the resistance, R, offered by a conductor is INCORRECT?

Ans

✓ A. It is directly proportional to the cross-section, A, of the conductor.

✗ B. It varies directly with the length, l, of the conductor.

✗ C. It depends on the temperature of the conductor.

✗ D. It depends on the nature of the material.

Question ID : **481843993**
Status : **Answered**
Chosen Option : **A**

Q.81 The thickness of lamination (which reduces eddy current loss) in electrical machine varies from:
(Select the closest range)

Ans

✗ A. 0.1 to 1 mm

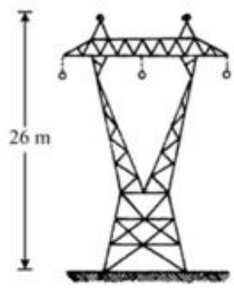
✗ B. 0.5 to 2 mm

✗ C. 0.1 to 2 mm

✓ D. 0.5 to 5 mm

Question ID : **481843936**
Status : **Answered**
Chosen Option : **D**

Q.82



What does the given figure represent?

Ans

✔ A. Single circuit two ground wire tower

✘ B. Two-bundle conductor two-ground wire tower

✘ C. Single and double circuit towers with one ground wire

✘ D. HVDC bipolar tower

Question ID : **481843972**
Status : **Answered**
Chosen Option : **C**

Q.83 For which of the following reasons are the EHV lines NOT preferred?

Ans

✘ A. With an increase in operating voltage, the number of circuits and the requirements of land are reduced considerably.

✘ B. There is improved performance of transmission lines, i.e., efficiency and regulation increases with an increase in transmission voltage.

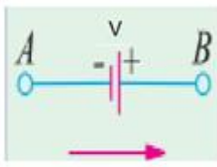
✘ C. The installation cost of transmission lines per kilometre decreases as the volume of the conductor decreases, and hence the cost of line support reduces.

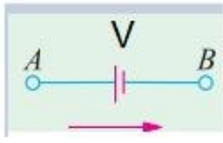
✔ D. There is an increase in surge impedance loading as it is directly proportional to the transmission voltage.

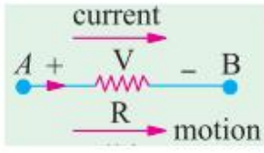
Question ID : **481843978**
Status : **Answered**
Chosen Option : **C**

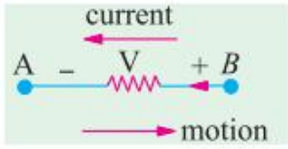
Q.84 Select the correct figure for fall in voltage –V = –IR:

Ans

✗ A.


✗ B.


✗ C.


✓ D.


Question ID : **4818431001**
Status : **Answered**
Chosen Option : **B**

Q.85 Which of the following methods used for average value determination is convenient for non-sinusoidal waves?

Ans

✗ A. Infinite method

✓ B. Mid-ordinate method

✗ C. Method of integration

✗ D. n-strips method

Question ID : **481843946**
Status : **Answered**
Chosen Option : **C**

Q.86 How does the synchronous condenser work under heavy loads?

Ans

✗ A. It works as a synchronous motor.

✓ B. It works as a VAR generator.

✗ C. It works as a VAR absorber.

✗ D. It works as a synchronous generator.

Question ID : **481843982**
Status : **Answered**
Chosen Option : **A**

Q.87 Which of the following principles is utilised in an electrodynamometer type instrument?

Ans

✗ A. Magnitude effect

✗ B. Force between two permanent magnets

✓ C. Force between two current-carrying coils

✗ D. Force between a permanent magnet and a current-carrying coil

Question ID : **4818431037**
Status : **Answered**
Chosen Option : **D**

Q.88 A 3-phase induction motor has a 27-slot, 9-coil, 4-pole stator. Calculate the number of coils per phase.

Ans

✗ A. 4 coils/phase

✗ B. 1 coil/phase

✓ C. 3 coils/phase

✗ D. 2 coils/phase

Question ID : **4818431040**
Status : **Answered**
Chosen Option : **C**

Q.89 Which of the following wiring is the cheapest among the given options?

Ans

✗ A. Casing capping wiring

✗ B. Batten wiring

✗ C. Conduit wiring

✓ D. Cleat wiring

Question ID : **481843987**
Status : **Answered**
Chosen Option : **D**

Q.90 For a sinusoidal waveform, the RMS value of current will be _____ times the maximum value of current.

Ans

✗ A. 1.1

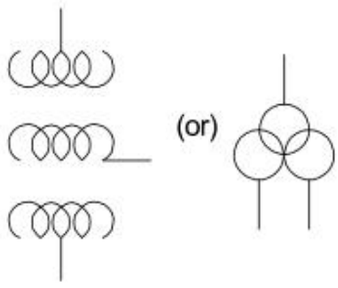
✗ B. 1.414

✗ C. 0.637

✓ D. 0.707

Question ID : **481843945**
Status : **Answered**
Chosen Option : **D**

Q.91 Select the correct option for the given figure.



Ans

✗ A. Current transformer (CT)

✗ B. Power transformer - two winding

✗ C. Voltage transformer or Potential transformer (PT)

✓ D. Three winding transformer

Question ID : **4818431041**
Status : **Answered**
Chosen Option : **D**

Q.92 A 40 ohm resistor is in parallel with an 80 ohm resistor. Current in the 40 ohm resistor is 6 A. How will you add a third resistor and what will be its value if the line-current is to be 10 A?

Ans

✓ A. Parallel, 240 Ω

✗ B. Parallel, 20 Ω

✗ C. Series, 24 Ω

✗ D. Series, 200 Ω

Question ID : **481843996**
Status : **Answered**
Chosen Option : **B**

Q.93 Which of the following options about tunnel diodes is INCORRECT?

Ans

✓ A. The width of depletion region is high compared to the P-N junction.

✗ B. Impurity concentration is high as compared to P-N junction.

✗ C. The V-I characteristics show the negative resistance region.

✗ D. Carrier velocities are very high.

Question ID : **4818431032**
Status : **Answered**
Chosen Option : **C**

Q.94 **A single-turn circular coil of 60-m diameter carries a direct current of 30×10^4A. Assuming Laplace's expression for the magnetising force due to a current element, determine the magnetising force at a point on the axis of the coil and 80 m from the coil. The relative permeability of the space surrounding the coil is unity.**

Ans

✗ A. 150 AT/m

✗ B. 230 AT/m

✓ C. 216.44 AT/m

✗ D. 200 AT/m

Question ID : **4818431006**
Status : **Answered**
Chosen Option : **C**

Q.95 **_____ is usually used in RF power amplifier and in amateur radio.**

Ans

✗ A. Primary amplifier

✗ B. Secondary amplifier

✗ C. Non-linear amplifier

✓ D. Linear amplifier

Question ID : **481843968**
Status : **Answered**
Chosen Option : **B**

Q.96 **In EHV lines, bundled conductors are required for reducing:**

Ans

✗ A. Ferranti effect

✗ B. proximity effect

✓ C. corona effect

✗ D. skin effect

Question ID : **481843981**
Status : **Answered**
Chosen Option : **C**

Q.97 **_____ is a proportionality factor relating the charge between two metal surfaces.**

Ans

✓ A. Capacitance

✗ B. Inductance

✗ C. Both resistance and capacitance

✗ D. Resistance

Question ID : **481843930**
Status : **Answered**
Chosen Option : **A**

Q.98 What is the shape of the hysteresis loop of silicon steel material?

Ans

✗ A. Parallel

✓ B. Narrow

✗ C. Spacious

✗ D. Wide

Question ID : **481843937**
Status : **Answered**
Chosen Option : **C**

Q.99 Which of the following methods, used for maintaining the voltage within limits, are provided at both ends of all transmission lines?

Ans

✗ A. Static VAR compensators at heavy loads

✓ B. Shunt reactors

✗ C. Shunt capacitor banks

✗ D. Synchronous condensers

Question ID : **481843979**
Status : **Answered**
Chosen Option : **B**

Q.100 Which of the following statements about the EHV lines is INCORRECT?

Ans

✗ A. The line can be easily tapped and or extended as the power need not be converted.

✓ B. The surface-voltage gradient on conductors becomes lower as the voltage increases.

✗ C. Current density increases as voltage increases with charging current.

✗ D. Voltage can be steeped up or stepped down to the required level using transformers.

Question ID : **481843980**
Status : **Answered**
Chosen Option : **D**

Q.101 Hysteresis is the name given to the _____ of flux density behind the magnetising force, when a specimen of ferromagnetic material is taken through a cycle of magnetisation.

Ans

✓ A. lagging

✗ B. prime

✗ C. leading

✗ D. unit

Question ID : **481843939**
Status : **Answered**
Chosen Option : **A**

Q.102 An alternating voltage e = 400 sin 314t is applied to a device that offers an ohmic resistance of 10 Ω to the flow of current in one direction, while preventing the flow of current in the opposite direction. Calculate the RMS value and average value, respectively, for the current over one cycle.

Ans

✗ A. 10 A and 15 A

✗ B. 15 A and 10 A

✗ C. 4 A and 7.5 A

✓ D. 20 A and 12.7 A

Question ID : **4818431012**
Status : **Answered**
Chosen Option : **C**

Q.103 A 2 m long wire is bent into a circle. If the current flowing through the wire is 50 A, find the magnetising force at the centre of the circle.

Ans

✗ A. 65 AT/m

✓ B. 78.54 AT/m

✗ C. 74.45 AT/m

✗ D. 68.13 AT/m

Question ID : **4818431007**
Status : **Answered**
Chosen Option : **D**

Q.104 In higher voltage transmission lines, beyond 33 kV, a _____ is used to make the costing economical.

Ans

✗ A. strain insulator

✗ B. pin insulator

✓ C. suspension insulator

✗ D. stay insulator

Question ID : **481843986**
Status : **Answered**
Chosen Option : **C**

Q.105 In which of the following tests, which may be used to measure the synchronous impedance, should the reading be taken in a short time to avoid armature overheating?

Ans

✗ A. Open-circuit characteristic test

✓ B. Short-circuit characteristic test

✗ C. Primary circuit characteristic test

✗ D. Secondary circuit characteristic test

Question ID : **481843958**
Status : **Answered**
Chosen Option : **B**

Q.106 Which of the following types of line support use is limited to 80 m spans?

Ans

✗ A. Wooden poles

✗ B. Lattice steel towers

✓ C. Steel poles

✗ D. RCC poles

Question ID : **481843984**
Status : **Answered**
Chosen Option : **A**

Q.107 If a conductor is made into a loop and current is passed through it, then the magnetic flux lines are in:

Ans

✓ A. concentric circles all along its length

✗ B. contact with circles all along its length

✗ C. orthogonal circles all along its length

✗ D. eccentric circles all along its length

Question ID : **481843931**
Status : **Answered**
Chosen Option : **B**

Q.108 In a synchronous motor, the value of coupling angle depends on:

Ans

✗ A. the back EMF

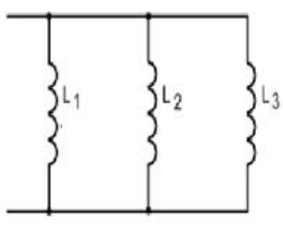
✗ B. the excitation of the rotor

✓ C. the amount of load met by the motor

✗ D. the speed of the rotor

Question ID : **4818431023**
Status : **Not Answered**
Chosen Option : **--**

Q.109 In the given circuit, determine the L_T if $L_1 = 5$ mH, $L_2 = 5$ mH and $L_3 = 10$ mH.



Ans

✓ A. 2 mH

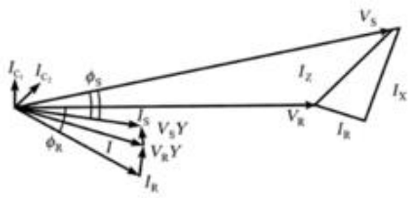
✗ B. 1.25 mH

✗ C. 1 mH

✗ D. 1.5 mH

Question ID : **4818431024**
Status : **Answered**
Chosen Option : **A**

Q.110



The given figure represents the phasor diagram of:

Ans

- ✗ A. nominal T model
- ✗ B. localised capacitance at the middle of the line
- ✓ C. nominal π model
- ✗ D. localised capacitance at the load end

Question ID : **481843974**
Status : **Not Answered**
Chosen Option : **--**

Q.111 An 8-pole, 3-phase induction motor operates from a supply whose frequency is 50 Hz. Calculate the speed at which the magnetic field of the stator is rotating.

Ans

- ✗ A. 900 rpm
- ✗ B. 850 rpm
- ✓ C. 750 rpm
- ✗ D. 800 rpm

Question ID : **4818431018**
Status : **Answered**
Chosen Option : **C**

Q.112 Which of the following statements about the core type transformer compared to shell type transformer is INCORRECT?

Ans

- ✓ A. The core surrounds a considerable portion of the windings.
- ✗ B. It is more suitable for high voltage transformers.
- ✗ C. The windings are form-wound, and are of cylindrical type.
- ✗ D. The mean length of coil is shorter.

Question ID : **481843956**
Status : **Not Answered**
Chosen Option : **--**

Q.113 _____ is mostly caused by leakage over the insulators and is always neglected in a power transmission line.

Ans

- ✓ A. Shunt conductance
- ✗ B. Resistance
- ✗ C. Conductance
- ✗ D. Inductance

Question ID : **481843962**
Status : **Not Answered**
Chosen Option : **--**

Q.114 Which of the following is an INCORRECT substation type based on application?

Ans

✗ A. Primary grid substation

✗ B. Mobile substation

✓ C. SF_6 gas insulated substation

✗ D. Step-up substation

Question ID : **4818431026**
Status : **Not Answered**
Chosen Option : **--**

Q.115 Which of the following is NOT the advantage of AC?

Ans

✗ A. Whenever it is necessary, AC supply can be easily converted to obtain DC supply.

✗ B. The voltages in AC system can be raised or lowered with the help of a device called transformer.

✗ C. AC electrical motors are simple in construction, are cheaper and require less attention from maintenance point of view.

✓ D. AC are attractive and can be used for electrofishing, electroplating etc.

Question ID : **481843943**
Status : **Not Answered**
Chosen Option : **--**

Q.116 Which of the following is NOT the advantage of gravity control instruments?

Ans

✓ A. Its scale is uniform.

✗ B. It is cheaper than spring control instrument.

✗ C. It is not subjected to fatigue.

✗ D. It is unaffected by temperature variations.

Question ID : **481843953**
Status : **Answered**
Chosen Option : **A**

Q.117 Watt-hour meter can be produced using:

Ans

✗ A. heating effect

✗ B. electromagnetic effect

✓ C. induction effect

✗ D. chemical effect

Question ID : **481843952**
Status : **Answered**
Chosen Option : **C**

Q.118 The magnitude of the magnetic field at a distance R from a long, straight wire carrying a current I is given by:

Ans

✗ A. $B = \propto_0 I*2\ \pi R$

✓ B. $B = \propto_0 I/2\ \pi R$

✗ C. $B = 2\ \pi R/I$

✗ D. $B = I/\Pi r$

Question ID : **4818431004**
Status : **Not Answered**
Chosen Option : **--**

Q.119 Which of the following laws is applied for mesh analysis of the network?

Ans

✓ A. Kirchhoff's voltage law

✗ B. Kirchhoff's current law

✗ C. Kirchhoff's first law

✗ D. Kirchhoff's junction rule

Question ID : **481843944**
Status : **Answered**
Chosen Option : **A**

Q.120 Ampere per turns per unit length of each part of a magnetic material depends upon the:

Ans

✗ A. thickness of the laminations

✗ B. frequency of variation of the voltage

✓ C. working flux density

✗ D. volume of the magnetic material

Question ID : **481843941**
Status : **Answered**
Chosen Option : **C**