

Maharashtra Public Service Commission

Question Paper Name :	DeputyEngineerElectricalandMechanicalGroupA 20th Mar 2023 Shift 2
Subject Name :	Deputy Engineer Electrical and Mechanical Group A
Actual Answer Key :	Yes
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

**Question Id : 630680190916 Sub Question Shuffling Allowed : Yes Group Comprehension
Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A
Think Time : N.A Minimum Instruction Time : 0**

Question Numbers : (1 to 3)

खालील उतारा वाचा आणि प्रश्नांची उत्तरे द्या.

साहित्येतर व्यवहारक्षेत्रांतील मराठीच्या स्थितीगतीचा विचार करण्यापूर्वी एकूणच भाषा व भाषाव्यवहार यांच्या नात्यावर दृष्टिक्षेप टाकणे आवश्यक आहे.जगात आजघडीला सुमारे सहा हजार भाषा अस्तित्वात आहेत.त्यांपैकी सुमारे ५० ते ९० टक्के भाषा चालू शतकाअखेर नामशेष होतील असे काही भाषावैज्ञानिकांचे भाकीत आहे. असेही सांगितले जाते की, जगातील ९७ टक्के लोक केवळ ४ टक्के भाषा वापरतात व उरलेले ३ टक्के लोक ९६ टक्के भाषा वापरतात. याचा अर्थ जगामध्ये मोठ्या प्रमाणात भाषिक ध्रुवीकरण झाले व होत असून अनेक भाषा आपला जनाधार गमावत आहेत. एकेका व्यवहारक्षेत्रातून त्या हद्दपार होत आहेत.सर्व भाषा सारख्याच धोक्याच्या स्थितीत नसल्या तरी ज्यांच्या भवितव्याबाबत काळजी वाटावी अशाच भाषा जगात बहुसंख्येने आहेत एवढे मात्र खरे. आपापल्या भाषा सांभाळा असे आवाहन युनेस्कोने जगातील भाषिक समूहांना यापूर्वीच केले आहे. भाषेचा न्हास किंवा अंत हा सजीवांप्रमाणे तडकाफडकी किंवा अटळपणे होत नसला आणि त्यांना वाचवणे आपल्या हातात असले तरी जगातील फारच थोड्या भाषा सुरक्षित

आहेत असे दिसते.

भाषेचा 'विकास' भाषेच्या विविध क्षेत्रांतील गुणवत्तापूर्ण वापरतून होत असतो. जगातील सर्व भाषांची विकासाची अंगभूत क्षमता बहुधा सारखी असली तरी त्यांच्या वापरक्षेत्रांची व्याप्ती व गुणवत्ता व त्यांचे सामाजिक, राजकीय स्थान सारखे असत नाही. भाषेच्या विकासात तिच्या वापरक्षेत्रांची व्याप्ती व गुणवत्ता ही सर्वात निर्णायक गोष्ट आहे. इंग्रजी ही आजची प्रगत व वर्धिष्णू भाषा आहे असे जेव्हा आपण म्हणतो, तेव्हा तिचा समाजाच्या सर्व व्यवहारक्षेत्रांतील गुणवत्तापूर्ण वापर आपण विचारात घेतलेला असतो. भाषेच्या वापरामागे अनेक प्रकारच्या प्रेरणा असू शकतात. भाषा ही समाजाची ओळख असते. संप्रेषणाचे साधन असते. संस्कृतीचे माध्यम असते. सर्वात महत्त्वाचे म्हणजे ती सामाजिक संसाधन असते. व्यक्तीच्या व समाजाच्या भौतिक प्रगतीत भाषा महत्त्वाची भूमिका बजावत असते. त्यामुळे भाषिक अस्मितेपेक्षा भौतिक विकासाची प्रेरणा हीच भाषेच्या सर्वक्षेत्रीय व सार्वत्रिक वापरामागील महत्त्वाची प्रेरणा म्हणता येईल.

Sub questions

Question Number : 1 Question Id : 630680190917 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

युनेस्कोने जगातील भाषिक समूहांना कोणते आवाहन केले आहे?

Options :

1. इंग्रजीत संभाषण करण्याचे
2. बोलीभाषांचा सरकारी कारभारात वापर करण्याचे
3. आपापल्या भाषांत अनुवाद कार्य करण्याचे
4. आपापल्या भाषा सांभाळण्याचे

Question Number : 2 Question Id : 630680190918 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

भाषेच्या सर्वक्षेत्रीय व सार्वत्रिक वापरामागील महत्त्वाची प्रेरणा कोणती आहे?

Options :

1. भौतिक विकासाची प्रेरणा
2. भाषिक अस्मितेची प्रेरणा
3. भाषा अभिमानाची प्रेरणा
4. भाषा द्वेषाची प्रेरणा

Question Number : 3 Question Id : 630680190919 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

खालीलपैकी कोणते विधान चुकीचे आहे?

Options :

1. जगातील ९७ टक्के लोक केवळ ४ टक्के भाषा वापरतात.
2. भाषेचा 'विकास' भाषेच्या विविध क्षेत्रांतील गुणवत्तापूर्ण वापरातून होत असतो.
3. भाषेचा न्हास तडकाफडकी होतो.
4. जगात आजघडीला सुमारे सहा हजार भाषा अस्तित्वात आहेत.

Is Section Default? : null

Question Number : 4 Question Id : 630680190920 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

'देशासाठी प्राण अर्पण केलेला' - या शब्दसमूहासाठी योग्य शब्द शोधा.

Options :

1. पराक्रमी
2. हुतात्मा
3. सैनिक
4. महान

Question Number : 5 Question Id : 630680190921 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

खाली काही समूहदर्शक शब्द दिलेले आहेत, त्यांतील चुकीचा पर्याय ओळखा.

Options :

1. केलेले उपकार न जाणणारा - कृतघ्न
2. केलेले उपकार जाणणारा - कृतज्ञ
3. पायापासून डोक्यापर्यंत - पदमस्तक
4. दररोज प्रसिद्ध होणारे - दैनिक

Question Number : 6 Question Id : 630680190922 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

खालीलपैकी कोणती वाक्यरचना अर्थपूर्ण आहे?

Options :

1. आमच्या आहे भाषेवर आमचेच नियंत्रण कमी होत चालले.
2. भाषेवर होत आमचेच नियंत्रण कमी चालले आहे आमच्या.
3. कमी आमचेच नियंत्रण होत आमच्या भाषेवर आहे चालले.
4. आमच्या भाषेवर आमचेच नियंत्रण कमी होत चालले आहे.

Question Number : 7 Question Id : 630680190923 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

खाली नामे व त्यांचे अनेकवचन यांच्या जोड्या दिलेल्या आहेत, त्यांतील योग्य पर्याय ओळखा.

Options :

1. सून - सुना

2. भाकरी - भाकर
3. सासू - सासू
4. म्हैस - म्हैसी

**Question Number : 8 Question Id : 630680190924 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

एका ठराविक क्रमाने आलेल्या अक्षरांच्या समूहाला काही अर्थ प्राप्त झाला, तर, त्याला _____ असे म्हणतात.

Options :

1. धवनी
2. शब्द
3. चिन्ह
4. खुणा

**Question Number : 9 Question Id : 630680190925 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

'कोणत्याही बाबतीत उतावळेपणा करणे' यासाठी खाली दिलेल्या म्हणींतून योग्य म्हण ओळखा.

Options :

1. वरातीमागून घोडे
2. पिंडी ते ब्रह्मांडी

3. खाण तशी माती
4. पी हळद अन् हो गोरी

Question Number : 10 Question Id : 630680190926 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

‘अति तेथे माती’ या म्हणीचा अर्थ काय आहे?

Options :

1. अति खाणे झाल्यास परिणाम वाईट होतो.
2. अति माती खाणे चांगले नसते.
3. वाईट दशा आचरण बिघडवते.
4. कोणत्याही गोष्टीचा अतिरेक वाईटच असतो, तो नाश घडवतो.

Is Section Default? : null

Question Number : 11 Question Id : 630680190933 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following approaches of science relies on systematic observations?

Options :

1. Empiricism
2. Rationalism

3. Determinism
4. Personal experience

Question Number : 12 Question Id : 630680190934 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

What is the name of the study that involves clinical trial in which neither the participants nor the researcher knows which treatment or intervention participants are receiving until the clinical trial is over?

Options :

1. Triple-blind study
2. Double-blind study
3. Blind study
4. Empirical study

Question Number : 13 Question Id : 630680190935 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is NOT a characteristic of modernisation?

Options :

1. It decreases economic and political participation.
2. New ideas are accepted in modernisation.
3. Modernisation is a universal process of change.

4. It leads to increase in urbanisation, equality, freedom and democratic values.

Question Number : 14 Question Id : 630680190936 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

According to which perspective of modernization is the underdevelopment of some countries and the development of others linked to the emergence of the modern capitalist system on a global scale?

Options :

1. The psychological perspective
2. The diffusionist perspective
3. The Marxian perspective
4. The ideal-typical perspective

Question Number : 15 Question Id : 630680190937 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following compounds does NOT cause ozone layer depletion?

Options :

1. CFCs
2. CO₂
3. Halons
4. HCFCs

Question Number : 16 Question Id : 630680190938 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following standards related to environmental management that exists to help organizations minimise their operations that negatively affect the environment?

Options :

1. ISO 8000
2. ISO 11000
3. ISO 14000
4. ISO 6000

Question Number : 17 Question Id : 630680190939 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

India is the _____ largest emitter of CO₂ in the world, as per the India Energy Outlook 2021 report.

Options :

1. first
2. second
3. fourth
4. third

Question Number : 18 Question Id : 630680190940 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

In which year was the Policy Statement for Abatement of Pollution adopted in India?

Options :

1. 1992

2. 1995

3. 1998

4. 1999

Question Number : 19 Question Id : 630680190941 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

In which of the following years was the 'Pradhan Mantri Awas Yojana (Urban)' launched to tackle the urban housing backlog in India?

Options :

1. 2017

2. 2014

3. 2015

4. 2018

Question Number : 20 Question Id : 630680190942 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

As per the Sample Registration System (SRS) Bulletin of Registrar General of India (RGI), what was the Infant Mortality Rate (IMR) in India per 1,000 live births in the year 2019?

Options :

1. 81
2. 37
3. 35
4. 30

Is Section Default? : null

Question Number : 21 Question Id : 630680190943 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

The potential difference between two plates is related to the charge on the plates by a proportionality constant. This constant is known as _____.

Options :

1. conductor
2. dielectric constant
3. capacitance
4. conductance

Question Number : 22 Question Id : 630680190944 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

In an electrodynamic instrument, how many coils are used instead of permanent magnets to provide the magnetic field?

Options :

1. 1

2. 2

3. 3

4. 4

**Question Number : 23 Question Id : 630680190945 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following statements is correct about electrostatic instruments?

Options :

1. They measure only the AC quantity of voltage.
2. Deflecting torque is directly proportional to voltage.
3. The power consumption is quite low.
4. The scale is uniform.

**Question Number : 24 Question Id : 630680190946 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is NOT considered as an analogue instrument?

Options :

1. Null-type and deflection-type instruments
2. Indicating instrument

3. Integrating instrument
4. Digital display meter

Question Number : 25 Question Id : 630680190947 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following options is **INCORRECT** as a property of DVMs?

Options :

1. High input range
2. High absolute accuracy
3. Resolution 1 part in million
4. Requirement for calibration from to time to time

Question Number : 26 Question Id : 630680190948 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following parameters is inversely proportional to the flux produced in a soiled electromagnetic core?

Options :

1. Number of turns
2. Current
3. Area of the core

4. Reluctance

Question Number : 27 Question Id : 630680190949 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

A magnetic circuit with two or more than two paths for the magnetic flux is called _____.

Options :

1. direct magnetic circuit
2. indirect magnetic circuit
3. parallel magnetic circuit
4. series magnetic circuit

Question Number : 28 Question Id : 630680190950 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Negative Marks

Display Text : 0.5

Correct Marks : 2 Wrong Marks : 0.5

Induced EMF ' E_1 ' in a transformer is _____ flux by 90° .

Options :

1. leading
2. lagging
3. connected
4. non-connected

**Question Number : 29 Question Id : 630680190951 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Excitation current is made up of two components, of which the one in phase with the applied voltage 'V' is called

_____.

Options :

1. current loss component
2. core loss component
3. voltage drop loss
4. magnetising current

**Question Number : 30 Question Id : 630680190952 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following methods is used for the winding resistance test of a transformer?

Options :

1. Dielectric test of transformer method
2. Zero sequence impedance method
3. Kelvin bridge method
4. Vector group test of transformer method

Question Number : 31 Question Id : 630680190953 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following tests is conducted by measuring the high voltage winding voltage and the low voltage winding voltage?

Options :

1. Measurement of acoustic noise level
2. Winding resistance test
3. Transformation ratio test
4. Dielectric test of transformer

Question Number : 32 Question Id : 630680190954 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Negative Marks

Display Text : 0.5

Correct Marks : 2 Wrong Marks : 0.5

For resistive load, the percentage of voltage regulation is equal to the percentage of _____.

Options :

1. reactance drop $\times \sin\phi_2$
2. resistance drop $\times \sin\phi_2$
3. resistance drop
4. reactance drop

Question Number : 33 Question Id : 630680190955 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following options is correct when copper losses are equal to core losses in a transformer?

Options :

1. Minimum efficiency
2. Maximum efficiency
3. All-day efficiency
4. Maximum power efficiency

Question Number : 34 Question Id : 630680190956 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

What is the transmission ratio of a transformer wherein the size of the autotransformer is approximately 50% of the corresponding size of two winding transformers?

Options :

1. 1
2. 2
3. 4
4. 8

Question Number : 35 Question Id : 630680190957 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

A star-delta connected transformer with 1 : 1 as the turns ratio will provide _____ line-voltage ratio.

Options :

1. $1 : \sqrt{3}$ step-down
2. $\sqrt{3} : 1$ step-down
3. $1 : \sqrt{3}$ step-up
4. $\sqrt{3} : 1$ step-up

**Question Number : 36 Question Id : 630680190958 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following parts is NOT used in synchronous motors?

Options :

1. Field winding with AC supply
2. Armature winding with AC supply
3. Damping winding for self-starting
4. Pole for the electric magnetic field

**Question Number : 37 Question Id : 630680190959 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Negative Marks
Display Text : 0.5**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following options is INCORRECT as a feature of a synchronous motor?

Options :

1. It maintains a constant speed from no-load to full load.
2. The speed of a synchronous motor is dependent on load.
3. It is not inherently self-starting.
4. It is operated under a wide range of power factors - both lagging and leading.

Question Number : 38 Question Id : 630680190960 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Negative Marks Display Text : 0.5

Correct Marks : 2 Wrong Marks : 0.5

A synchronous machine produces the maximum power when the load angle is _____.

Options :

1. 0°
2. 30°
3. more than 90°
4. less than 90°

Question Number : 39 Question Id : 630680190961 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

_____ is a combination of the armature winding leakage reactance and the reactance used to represent an armature reaction.

Options :

1. Synchronous resistance

2. Synchronous reactance
3. Synchronous impedance
4. Synchronous admittance

Question Number : 40 Question Id : 630680190962 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following options is INCORRECT as a part of a single-phase induction motor?

Options :

1. Slip rings
2. Capacitor
3. Armature winding
4. Bearing

Question Number : 41 Question Id : 630680190963 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

In which of the following single-phase induction motors is an extra winding wound on the same core of the stator and is connected with a centrifugal switch?

Options :

1. Capacitor-start induction motor
2. Shaded-pole induction motor

3. Split-phase induction motor
4. Permanent capacitor induction motor

**Question Number : 42 Question Id : 630680190964 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Single-phase induction motors do not _____ without an auxiliary stator winding driven by an out-of-phase current of near 90° .

Options :

1. self-start
2. start
3. have low torque
4. have low current

**Question Number : 43 Question Id : 630680190965 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following methods is used in applications wherein very sensitive speed control of motors is required?

Options :

1. Multiple voltage control method
2. Ward Leonard system
3. Armature control method

4. Flux control method

Question Number : 44 Question Id : 630680190966 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

In a three-point starter, when the arm is moved from Position 1 to the last position, the starter resistance gets _____ in series with the field winding.

Options :

1. subtracted
2. added
3. divided
4. multiplied

Question Number : 45 Question Id : 630680190967 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

If a DC motor is started without starter, which part of the DC motor CANNOT get damaged?

Options :

1. Brushes
2. Commutator
3. Yoke
4. Windings

Question Number : 46 Question Id : 630680190968 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which types of plants use the geothermal fluids that pass through a heat exchanger with a secondary fluid and then, drive the turbines, spin the generators and create electricity?

Options :

1. Flash steam power plants
2. Dry steam power plants
3. Binary-cycle power plants
4. Direct heat transfer power plants

Question Number : 47 Question Id : 630680190969 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following statements is INCORRECT for conventional hydropower stations?

Options :

1. A surge chamber is created with a dam.
2. Penstocks convey the water from the dam towards hydraulic turbines.
3. A downstream basin is used.
4. An upstream basin is used through a pumping station.

Question Number : 48 Question Id : 630680190970 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which type of turbine ensures optimum performance with small height differences, but also with large variations in capacity?

Options :

1. Pelton turbine
2. Kaplan turbine
3. Francis turbine
4. Turbo turbine

Question Number : 49 Question Id : 630680190971 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following components of a nuclear power generation station contains the fuel and has a nuclear chain reaction with all of the nuclear waste products?

Options :

1. Steam generation unit
2. Turbine and generator
3. Nuclear reactor
4. Cooling tower

Question Number : 50 Question Id : 630680190972 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following options is INCORRECT as a nuclear fuel used in a nuclear reactor for the fission process?

Options :

1. Thorium-232
2. Uranium-233
3. Cadmium-253
4. Plutonium-239

Question Number : 51 Question Id : 630680190973 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following conditions is INCORRECT when a site is to be selected for a steam power plant?

Options :

1. The fuel station should be near the plant.
2. The fuel station must be positioned near a riverbank.
3. The fuel station must be located near populated areas.
4. The plant should be placed near load centres.

Question Number : 52 Question Id : 630680190974 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is an advantage of a steam power station?

Options :

1. Life and effectiveness of a steam power plant are concise.
2. Cost of power generation is high.
3. It takes low initial investment and less time to commission a plant.
4. Coal may get depleted due to gradual use.

Question Number : 53 Question Id : 630680190975 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following states is correct regarding the output that is constant during the operation of a plant?

Options :

1. Base supply without regulation
2. Base supply with regulation
3. Automatic non-economic regulation
4. Automatic economic regulation

Question Number : 54 Question Id : 630680190976 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following factors does NOT influence the generating cost?

Options :

1. Generator efficiency

2. Fuel cost
3. Unbalanced load
4. Transmission losses

Question Number : 55 Question Id : 630680190977 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is equal to a small change in input divided by the corresponding change in output?

Options :

1. Fundamental curve rate
2. Corrected fuel rate
3. Incremental fuel rate
4. Conditional curve rate

Question Number : 56 Question Id : 630680190978 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

In case of which of the following buses are the voltage magnitude and the active power at the bus specified?

Options :

1. Load bus
2. Generator bus
3. PQ bus

4. Swing bus

Question Number : 57 Question Id : 630680190979 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is a set of unknown quantities used for a reference bus?

Options :

1. P and $|V|$
2. P and Q
3. Q and δ
4. $|V|$ and δ

Question Number : 58 Question Id : 630680190980 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is called a true short circuit?

Options :

1. Focus-on short circuit
2. Bolted short circuit
3. Open circuit
4. Corrected short circuit

**Question Number : 59 Question Id : 630680190981 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which type of fault is called symmetrical fault?

Options :

1. Single line-to-ground fault
2. Line-to-line fault
3. Double line-to-ground fault
4. Balanced three-phase fault

**Question Number : 60 Question Id : 630680190982 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is an example of the transient stability of a power system?

Options :

1. A circuit exceeding the maximum power permissible
2. Sudden application or removal of the load
3. Normal load fluctuation
4. Action of an automatic voltage regulator

**Question Number : 61 Question Id : 630680190983 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following components of an HVDC transmission line is used for AC-to-DC conversion and DC-to-AC conversion?

Options :

1. Smooth reactor
2. Harmonic filter
3. Converter
4. DC lines

Question Number : 62 Question Id : 630680190984 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following statements is INCORRECT about an HVDC line compared to an HVAC line?

Options :

1. It is used for bulk power transmission over long distances.
2. Its use incurs low transmission losses.
3. It easily increases the voltage level.
4. Its use involves less voltage fluctuations.

Question Number : 63 Question Id : 630680190985 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which type of voltage control reactor is located near the load end and can inject or absorb reactive power?

Options :

1. Shunt capacitor
2. Synchronous condenser
3. Shunt reactor
4. Induction voltage regulator

Question Number : 64 Question Id : 630680190986 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following options is INCORRECT as a function of a switchgear in a power system?

Options :

1. To carry the circuit
2. To make the circuit
3. To break the circuit
4. To analyse the circuit

Question Number : 65 Question Id : 630680190987 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following devices is NOT included in the switchgear protection of a power system?

Options :

1. Protection relay
2. Electrical fuse

3. Arc joiner
4. Lightning arrester

Question Number : 66 Question Id : 630680190988 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

During the interruption of large current, a circuit breaker would be large arcing _____.

Options :

1. between the terminals of the circuit breaker
2. outside of the circuit breaker
3. between the switching contacts
4. in the material of the circuit breaker

Question Number : 67 Question Id : 630680190989 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following types of circuit breaker is categorised as a service?

Options :

1. Outdoor circuit breaker
2. Spring-operated circuit breaker
3. Pneumatic circuit breaker

4. High-voltage circuit breaker

Question Number : 68 Question Id : 630680190990 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which gas in an oil circuit breaker produces the cooling effect?

Options :

1. Methane
2. Hydrogen
3. CO₂
4. Nitrogen

Question Number : 69 Question Id : 630680190991 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which type of SF₆ circuit breaker is applied for a system of up to 420 KV?

Options :

1. Single-interrupter SF₆ circuit breaker
2. Two-interrupter SF₆ circuit breaker
3. Four-interrupter SF₆ circuit breaker
4. Six-interrupter SF₆ circuit breaker

Question Number : 70 Question Id : 630680190992 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following conditions is called de-energising of a relay?

Options :

1. When the electromagnet is applied with some current
2. When the copper coil and the iron core act as electromagnets
3. When the coil is applied with DC current
4. When the supply is removed and it retrieves to the original position

Question Number : 71 Question Id : 630680190993 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following types of relay is used to connect two terminals of a single circuit at a time?

Options :

1. Single-pole single-throw relay
2. Single-pole double-throw relay
3. Double-pole single-throw relay
4. Double-pole double-throw relay

Question Number : 72 Question Id : 630680190994 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following types of relay is a gas-operated or actuated relay that is used to detect incipient faults?

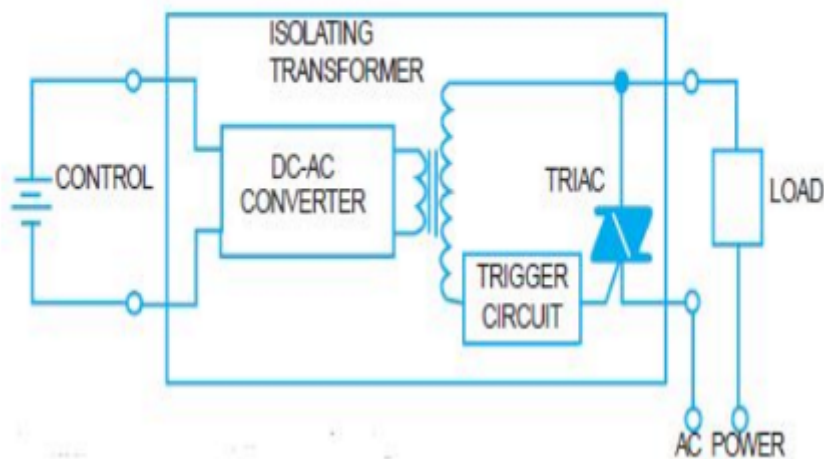
Options :

1. Polarised relay
2. Buchholz relay
3. Reed relay
4. Solid-state relay

Question Number : 73 Question Id : 630680190995 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Identify the type of relay shown in the following figure.



Options :

1. Solid-state relay
2. Inverse definite minimum time relay
3. Buchholz relay
4. Polarised relay

Question Number : 74 Question Id : 630680190996 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following provides a system that consolidates and presents the data from SCADA field devices and enables operators to understand and, if needed, modify the status of SCADA-controlled processes?

Options :

1. Communication infrastructure
2. HMI software
3. SCADA supervisory computers
4. Remote terminal units

Question Number : 75 Question Id : 630680190997 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following makes the communication between relays and other equipment in a network possible, for doing automation of the system?

Options :

1. Mechanical relay
2. Numerical relay
3. Solid-state relay
4. Overcurrent relay

**Question Number : 76 Question Id : 630680190998 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is shown at the back side of a numerical relay?

Options :

1. Numerical keypad
2. LED reset button
3. Control button
4. TB for binary outputs

**Question Number : 77 Question Id : 630680190999 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is the correct representation of a converter that is a kind of integrated circuit which converts signals from continuous form into discrete form directly?

Options :

1. D/A
2. A/D
3. DAC
4. D to A

Question Number : 78 Question Id : 630680191000 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

The final block in ADC is a/an _____ that converts signals from digital form into binary form.

Options :

1. encoder
2. quantise
3. hold
4. sample

Question Number : 79 Question Id : 630680191001 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5



What does the above symbol, which is used in ladder logic, indicate?

Options :

1. Indicator lamp
2. Overload heater
3. Relay coil
4. Solenoid coil

Question Number : 80 Question Id : 630680191002 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following PLC operation steps involves communication with programming terminals, internal diagnostics, etc.?

Options :

1. Input scan
2. Housekeeping
3. Program scan
4. Output scan

Question Number : 81 Question Id : 630680191003 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is considered in an alternating current (AC) station service?

Options :

1. One or more battery banks
2. Emergency backup provided by a diesel generator
3. Flashing of the exciter field
4. Lubrication systems

Question Number : 82 Question Id : 630680191004 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following types of pump is used for removing leakage water from a plant?

Options :

1. Draught pump
2. Grape pump
3. Drainage pump
4. Tumbril pump

**Question Number : 83 Question Id : 630680191005 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following types of boiler feedwater pump is adopted for high-pressure and high-temperature applications, such as the subcritical steam power generation?

Options :

1. Ring section type pump
2. Horizontal split type pump
3. Double casing internal horizontal split type pump
4. Double casing internal ring section type pump

**Question Number : 84 Question Id : 630680191006 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is provided as a fire hydrant and spray system?

Options :

1. Water reservoir

2. Water pumps
3. Impeller
4. Hydrant and HVWSS

Question Number : 85 Question Id : 630680191007 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following helps reduce fire hazards in a power plant?

Options :

1. Outdoor or indoor oil-insulated equipment
2. Oil-insulated cable
3. Arc quenching by gas
4. Hydrogen-cooled synchronous condensers

Question Number : 86 Question Id : 630680191008 Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is included in control and relay building hazards?

Options :

1. Gasoline storage or dispensing facilities
2. Thermal damage caused to the building structure

3. Smoke damage caused to other equipment

4. Mechanical damage by force

Question Number : 87 Question Id : 630680191009 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

An earth mat helps in limiting the ground potential and offers protection against the _____.

Options :

1. faulty current

2. heat produced by equipment

3. fire hazards

4. cooling of the system

Question Number : 88 Question Id : 630680191010 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

What is the recommended value of ground resistance according to the NFPA and the IEEE?

Options :

1. 5.0 Ω or higher

2. 5.0 Ω or lower

3. 25.0 Ω or lower

4. 35.0 Ω or higher

**Question Number : 89 Question Id : 630680191011 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is NOT done by using earth mats in a power station?

Options :

1. Discharging the overvoltage from overhead lightning masts
2. Providing neutral earthing
3. Arranging a path to discharge the charge between phase and ground by using earthing switches
4. Controlling the voltage level by providing a path for reactive power

**Question Number : 90 Question Id : 630680191012 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

Correct Marks : 2 Wrong Marks : 0.5

Which of the following does NOT use the DC battery system supply in a power station?

Options :

1. Control and signalling work
2. Relays and the tripping circuit
3. Supply distribution system
4. Emergency motors

Question Number : 91 Question Id : 630680191013 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is a rectifier with AC input that is normally made to take all the DC requirements of a power station, without allowing the battery to discharge?

Options :

1. Fast charger
2. Trickle charger
3. Confider controller
4. Charge controller

Question Number : 92 Question Id : 630680191014 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Floating in DC bus bars, the battery remains connected to the DC bus bars as a _____.

Options :

1. direct supply source
2. standby supply source
3. fluctuated supply source
4. constant supply source

Question Number : 93 Question Id : 630680191015 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which type of battery is NOT used in a power system for backup of the DC supply?

Options :

1. Lead–acid battery (tubular)
2. Lead–acid battery (plaint)
3. Dry cell (circular)
4. Ni–Cd battery

Question Number : 94 Question Id : 630680191016 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following auxiliary equipment of a power station is used as immediate protection against the input power interruptions?

Options :

1. Charge controller
2. Converter
3. Inverter
4. UPS

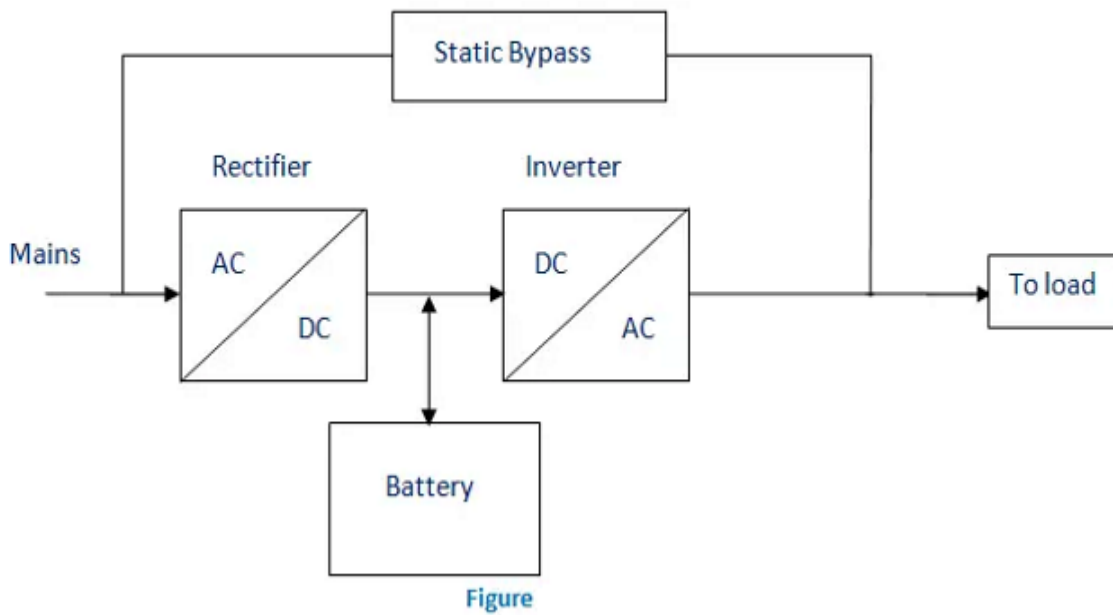
Question Number : 95 Question Id : 630680191017 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Negative Marks

Display Text : 0.5

Correct Marks : 2 Wrong Marks : 0.5

Identify the type of UPS shown in the following figure.



Options :

1. On-line UPS
2. Off-line UPS
3. Line interactive UPS
4. Standby-Ferro UPS

Question Number : 96 Question Id : 630680191018 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following devices converts fixed AC voltage into variable AC output voltage at the same frequency?

Options :

1. Inverter
2. Chopper
3. AC voltage controller

4. Cycloconverter

Question Number : 97 Question Id : 630680191019 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following options is correct about power BJT compared to MOSFET?

Options :

1. It is a majority carrier device.
2. It is a voltage control device.
3. It has negative temperature coefficient.
4. Switching frequency is relatively high.

Question Number : 98 Question Id : 630680191020 Is Question Mandatory : No Calculator :

None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

What is the output voltage in a single-phase fully controlled bridge that is connected to an RL load, where $R = 0.4 \Omega$ and $L = 2 \text{ mH}$, if the source voltage is 230 V, 50 Hz and the firing angle is 0° ?

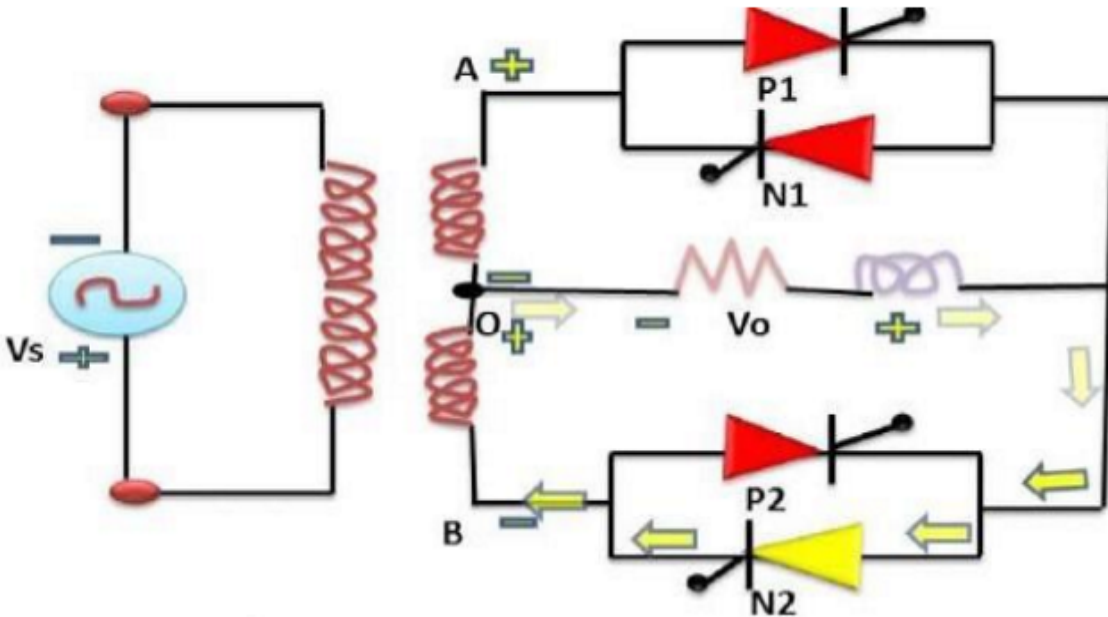
Options :

1. 320.20 V
2. 390.25 V
3. 207.07 V
4. 190.21 V

Question Number : 99 Question Id : 630680191021 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Negative Marks
Display Text : 0.5

Correct Marks : 2 Wrong Marks : 0.5

Identify the following circuit diagram.



Options :

1. Single-phase AC voltage regulator
2. Single-phase full-wave controlled rectifier
3. Midpoint cycloconverter
4. Bridge type cycloconverter

Question Number : 100 Question Id : 630680191022 Is Question Mandatory : No Calculator :
None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Wrong Marks : 0.5

Which of the following types of chopper works in two quadrants?

Options :

1. Class-A chopper
2. Class-B chopper
3. Class-D chopper
4. Class-E chopper