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RRB ALP 2018 CBT-2 Electrician

Assistant Loco Pilot & Technicians · CEN 01/2018 · CBT-2 (21-23 Jan 2019) · Trade: Electrician · Part B (Electrician) · Question Paper

English

Complete Paper · 75 Questions · Part B (Electrician) Section · Official Answer Key

About this Compilation

This booklet contains the complete question paper of the **RRB ALP 2018 CBT-2 Electrician** examination in **English** (**Part B (Electrician)** section only), with the correct option marked as per the official answer key.

✓ Correct option (highlighted green)

Source. Original images of the official RRB response sheets (no retyping). Paper = Part A 100 (Maths, Reasoning, Basic Science & Engineering, Current Affairs) + Part B 75 (trade).

Not in this edition (less than half saved in English; see the Hindi edition): 22 Jan 12:30 PM; 22 Jan 4:30 PM; 22 Jan 8:30 AM; 23 Jan 12:30 PM; 23 Jan 8:30 AM.

How to use

- Use the **Index** page to jump directly to any set (clickable).
- Questions appear section by section in the order of the paper, numbered 1 onward.
- Diagram and wide-table questions appear at full width at the end of their section.
- The correct answer is highlighted in green with a tick.

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Index — All Sets (click to open)

Set 1
23 Jan 2019
4:30 PM - 7:00 PM

Part B (Electrician) 75 Questions • Answer Key

Q1 Part B (Electrician)

In a capacitor start single-phase motor, the motor will continue to run in same direction if the capacitor is replaced by a:

A. inductor

B. resistor and capacitor

C. resistor ✓

D. resistor and inductor

Q2 Part B (Electrician)

PIV in a full-wave rectifier is:

A. $V_m/\sqrt{2}$

B. V_m

C. $V_m/2$

D. $2V_m$ ✓

Q3 Part B (Electrician)

Which of the following material is NOT used as fuse wire?

A. Aluminium

B. Silver

C. Paper ✓

D. Copper

Q4 Part B (Electrician)

Which of the following protects a cable against mechanical injury?

A. Core

B. Bedding

C. Armouring ✓

D. Sheath

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Q5 Part B (Electrician)

Choppers are _____ converters.

A. AC to DC

B. DC to AC

C. AC to AC

D. DC to DC ✓

Q6 Part B (Electrician)

The average power dissipated in a pure inductor is:

A. proportional to value of inductance

B. infinite

C. zero ✓

D. proportional to applied voltage

Q7 Part B (Electrician)

For the maximum efficiency of a transformer:

A. copper loss should be equal to iron loss ✓

B. copper loss should be greater than iron loss

C. copper loss should be less than iron loss

D. copper loss should be zero

Q8 Part B (Electrician)

Which of the following is NOT a trivalent impurity?

A. Phosphorus ✓

B. Gallium

C. Boron

D. Indium

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Q9 Part B (Electrician)

Hysteresis loss can be minimized by selecting a material for the core that has:

A. low hysteresis coefficient ✓

B. low transmission coefficient

C. unit hysteresis coefficient

D. high hysteresis coefficient

Q10 Part B (Electrician)

The ripple factor for a full-wave rectifier with capacitor is given by:

A. $r = \frac{1}{4\sqrt{3}fR_L}$

B. $r = \frac{1}{2\sqrt{3}fR_LC}$

C. $r = \frac{1}{4\sqrt{3}fR_LC}$ ✓

D. $r = \frac{1}{\sqrt{3}fR_LC}$

Q11 Part B (Electrician)

In an electrical machine, the core is laminated to reduce:

A. copper loss

B. friction loss

C. hysteresis loss

D. eddy current loss ✓

Q12 Part B (Electrician)

In an induction motor, as the air gap increases:

A. speed of motor will increase

B. windage losses will increase

C. speed of motor will decrease

D. power factor will decrease ✓

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Q13 Part B (Electrician)

Iron loss of a transformer can be measured by:

A. unity power factor watt meter

B. any type of watt meter

C. frequency meter

D. low power factor watt meter ✓

Q14 Part B (Electrician)

Which of the following device is bidirectional?

A. TRIAC ✓

B. BJT

C. SCR

D. GTO

Q15 Part B (Electrician)

Which of the following motor is self-starting?

A. Low horse power motor

B. Single-phase induction motor

C. Variable speed motor

D. Three-phase induction motor ✓

Q16 Part B (Electrician)

In a current transformer, the number of primary turns is always:

A. zero

B. greater than the number of secondary turns

C. less than the number of secondary turns ✓

D. equals the number of secondary turns

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Q17 Part B (Electrician)

Conduit elbows are usually located at:

A. straight runs

B. the tappings of the connection

C. sharp ends ✓

D. away from walls

Q18 Part B (Electrician)

Overheating of DC motors is mainly due to:

A. rough commutator

B. loose parts

C. absence of brushes

D. overloads ✓

Q19 Part B (Electrician)

For transmission and distribution of electric power, which one of the following material is NOT used?

A. Copper

B. Steel

C. Aluminium

D. Tungsten ✓

Q20 Part B (Electrician)

The input power of an electric heater that draws 10 A at 230 V supply source is:

A. 0 W ✓

B. 23 W

C. 230 W

D. 2300 W

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Q21 Part B (Electrician)

If a resistance of 10 ohms and a capacitance of 1 μF is connected across a 230 V, 50 Hz AC supply, the capacitive reactance of the circuit is:

A. 0.0318Ω ✓

B. 31.83Ω

C. 3183Ω

D. 3.183Ω

Q22 Part B (Electrician)

The ripple factor for a half-wave rectifier with capacitor is given by:

A. $r = \frac{1}{4\sqrt{3}fR_L}$

B. $r = \frac{1}{4\sqrt{3}fR_LC}$

C. $r = \frac{1}{\sqrt{3}fR_LC}$

D. $r = \frac{1}{2\sqrt{3}fR_LC}$ ✓

Q23 Part B (Electrician)

In actual practice, the rating of transformer is specified in:

A. KVA ✓

B. KW

C. KA

D. KVAR

Q24 Part B (Electrician)

Which of the following is a valid grade for which electric cables are commercially manufactured?

A. 50/100V

B. 270/300V

C. 100/200V

D. 230/400V ✓

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Q25 Part B (Electrician)

A 3-point starter is used to:

- A. minimize armature current ✓
- B. minimize back emf
- C. maximize armature current
- D. maximize back emf

Q26 Part B (Electrician)

Power transmission for long distance is carried out at:

- A. high current
- B. high voltage ✓
- C. low voltage
- D. low current

Q27 Part B (Electrician)

In the case of direct current:

- A. magnitude of current changes with time
- B. magnitude of current remains constant
- C. magnitude and direction of current changes with time
- D. magnitude and direction of current remains constant ✓

Q28 Part B (Electrician)

Three identical resistors are first connected in a star and then in a delta configuration. The ratio of power consumption in the first combination to the second will be:

- A. 1
- B. $1/\sqrt{3}$
- C. 3
- D. 1/3 ✓

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Q29 Part B (Electrician)

In a series R-C circuit, the AC current is:

- A. leading the applied voltage ✓
- B. in phase with the applied voltage
- C. lagging behind the applied voltage
- D. out of phase with applied voltage

Q30 Part B (Electrician)

The unit of sensitivity of an instrument is:

- A. volt-amp
- B. ampere/sec
- C. volt/ohm
- D. ohm/volt ✓

Q31 Part B (Electrician)

The resistance of an ideal voltmeter is:

- A. very large
- B. zero
- C. very low
- D. infinite ✓

Q32 Part B (Electrician)

A DC generator works on the principle of:

- A. Ampere's law
- B. Lenz's law
- C. Steinmetz's law
- D. Faraday's law ✓

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Q33 Part B (Electrician)

If the voltage drop across individual resistors R_1, R_2 and R_3 connected to a battery are 10 V, 20 V and 30 V respectively, then the total battery voltage is:

A. 30 V

B. zero

C. 60 V ✓

D. 20 V

Q34 Part B (Electrician)

Which of the following two losses are together called core loss?

A. Eddy current loss and hysteresis loss ✓

B. Copper loss and hysteresis loss

C. Primary copper loss and secondary copper loss

D. Connector loss and transmission loss

Q35 Part B (Electrician)

The function of inverter in an UPS is to:

A. convert AC to AC ✓

B. convert DC to AC

C. convert DC to DC

D. convert AC to DC

Q36 Part B (Electrician)

Three-point starter can be used for:

A. both series and compound motor

B. shunt motor only

C. series motor only

D. both shunt and compound motor ✓

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Q37 Part B (Electrician)

For switching applications, a transistor needs to be biased to operate in which of the following regions?

A. Inverse active region

B. Active region

C. Saturation or cut-off region ✓

D. Active or inverse active region

Q38 Part B (Electrician)

A circuit in which resistances are connected end to end so that there is only one path for current to flow is called a _____.

A. neither series nor parallel circuit

B. series-parallel circuit

C. series circuit ✓

D. parallel circuit

Q39 Part B (Electrician)

In the _____ region, a transistor act as a closed switch.

A. cut-off region

B. active region

C. inverse active region

D. saturation ✓

Q40 Part B (Electrician)

In lap winding, the number of parallel paths are always:

A. two

B. double the number of poles

C. same as the number of poles ✓

D. half the number of poles

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Q41 Part B (Electrician)

Among the following, which feature is best suited for insulating materials?

A. Low mechanical strength ✓

B. Low melting point

C. High dielectric strength

D. Good current conductivity

Q42 Part B (Electrician)

From the following parameters, which parameter's variation will not affect the capacitance of the capacitor?

A. Distance between the plates

B. Nature of the dielectric

C. Thickness of the plates ✓

D. Area of the plates

Q43 Part B (Electrician)

Three resistances of 2 ohms, 3 ohms and 6 ohms are connected in parallel. the total resistance of the combination is:

A. 36 ohm

B. 3 ohm

C. 11 ohm

D. 1 ohm ✓

Q44 Part B (Electrician)

Among the following, which method is NOT preferred to measure low resistances?

A. Megohm bridge

B. Kelvin bridge method

C. Ammeter-voltmeter method ✓

D. Potentiometer method

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Q45 Part B (Electrician)

Conductance is defined as reciprocal of:

A. capacitance

B. inductance

C. resistance ✓

D. susceptance

Q46 Part B (Electrician)

UJT is used for which of the following applications?

A. Rectification

B. Sawtooth waveform generation ✓

C. Attenuation

D. Amplification

Q47 Part B (Electrician)

In a Fleming's right-hand rule, the thumb indicates the:

A. direction of induced voltage

B. direction of current flow

C. direction of motion of conductor ✓

D. direction of magnetic field

Q48 Part B (Electrician)

In portable drills, which of the following motor is used?

A. Hysteresis motor

B. Capacitor run motor

C. Repulsion motor

D. Universal motor ✓

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Q49 Part B (Electrician)

In which type of power amplifier does the output current flow for the entire cycle of input signal?

A. Class C

B. Class B

C. Class AB

D. Class A ✓

Q50 Part B (Electrician)

A feeder in a transmission system feeds power to:

A. generating station

B. service main

C. distributors ✓

D. generator and distributor

Q51 Part B (Electrician)

The complement of (A.B) is:

A. A.B

B. complement of A . complement of B

C. complement of A + complement of B ✓

D. A + B

Q52 Part B (Electrician)

The order in which the voltages in the phases reach their maximum positive value is called the _____.

A. phase voltage

B. phase sequence ✓

C. line voltage

D. phase current

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Q53 Part B (Electrician)

For an ideal transformer, if $I_2/I_1 = 2$ and $E_2 = 100$, E_1 will be:

A. 50

B. 100

C. 200 ✓

D. 25

Q54 Part B (Electrician)

If a 4-pole induction motor has a speed of 1800rpm, then the frequency at which the motor is operating is:

A. 50Hz

B. 60Hz ✓

C. 30Hz

D. 40Hz

Q55 Part B (Electrician)

Which among the following, remains same in a series circuit?

A. Power

B. Resistance

C. Current ✓

D. Voltage

Q56 Part B (Electrician)

Which one of the following materials is usually used for the construction of transformer core?

A. Silicon steel ✓

B. Copper

C. Brass

D. Aluminium

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Q57 Part B (Electrician)

Among the following, which material is a good conductor of electricity?

A. Silver

B. Rubber ✓

C. Glass

D. Bakelite

Q58 Part B (Electrician)

A transformer transfers which of the following parameters?

A. Voltage

B. Current

C. Frequency

D. Power ✓

Q59 Part B (Electrician)

An SCR consists of:

A. two PN junction

B. no PN junction

C. three PN junction ✓

D. one PN junction

Q60 Part B (Electrician)

A three-phase power system with three voltages E_A, E_B and E_C have an equal magnitude and are displaced at _____ from each other.

A. 180°

B. 120°

C. 90° ✓

D. 100°

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Q61 Part B (Electrician)

In the _____ region, a transistor act as an open switch.

A. active region

B. cut-off region ✓

C. saturation

D. inverse active region

Q62 Part B (Electrician)

Which one of the following motors is identical to an induction motor?

A. DC compound motor

B. Synchronous motor

C. DC series motor

D. Asynchronous motor ✓

Q63 Part B (Electrician)

In a DC shunt motor, the torque produced is proportional to:

A. $(\text{ampere-turn})^2$

B. ampere-turn

C. armature current ✓

D. $(\text{armature current})^2$

Q64 Part B (Electrician)

Copper loss is negligible at _____.

A. half load

B. ¼ load

C. no load ✓

D. full load

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Q65 Part B (Electrician)

What is the surge resistance of cable?

A. 20 Ω

B. 5 Ω

C. 10 Ω

D. 50 Ω ✓

Q66 Part B (Electrician)

The most commonly used method for cooling power transformers is:

A. air blast cooling ✓

B. oil cooling

C. natural air cooling

D. gas cooling

Q67 Part B (Electrician)

For amplifier applications, a transistor needs to be biased to operate in which of the following regions?

A. Cut-off region

B. Saturation region

C. Active region ✓

D. Depletion region

Q68 Part B (Electrician)

The form factor of an AC wave is defined as the ratio of:

A. RMS value to average value ✓

B. peak value to average value

C. RMS value to instantaneous value

D. peak value to instantaneous value

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Q69 Part B (Electrician)

The expression for inductive reactance (X_L) of an AC circuit is:

A. $\frac{1}{2\pi fL}$

B. $2\pi f$

C. $2\pi fL$ ✓

D. $2\pi L$

Q70 Part B (Electrician)

Three Identical bulbs are connected in series and these together dissipate power 'M'. If now the bulbs are connected in parallel, then the power dissipated will be:

A. M/3

B. 3M

C. 9M ✓

D. M/9

Q71 Part B (Electrician)

In a balanced three-phase star connected system, if the line current is 30 A, then its phase current is:

A. 17.3 A

B. 51.9 A

C. 15 A

D. 30 A ✓

Q72 Part B (Electrician)

Hysteresis loss is given by:

A. $W_e = KB_{max}^2 f^2 t^2$ W

B. $W_{cu} = (I_1^2 R_1 + I_2^2 R_2)$ W

C. $W_h = \eta B_{max}^{1.6} fV$ W ✓

D. $W_{cu} = (I_1^2 R_1)$ W

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Q73 Part B (Electrician)

The loss that takes place due to winding resistance is called _____.

A. hysteresis loss

B. eddy current loss

C. iron loss

D. copper loss ✓

Q74 Part B (Electrician)

Power consumed in a series RLC circuit can be calculated using:

A. $P = VI \cos \phi$

B. $P = VI$

C. $P = IR \cos \phi$ ✓

D. $P = IR$

Q75 Part B (Electrician)

The characteristics of patterns that appear on a CRT screen when sinusoidal voltages are simultaneously applied to horizontal and vertical plates are called _____.

A. Lissajous patterns ✓

B. colour patterns

C. phase patterns

D. eye patterns

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