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RRB ALP 2018 CBT-2 Electronics Mechanic

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

English

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

About this Compilation

This booklet contains the complete question paper of the **RRB ALP 2018 CBT-2 Electronics Mechanic** examination in **English** (**Part B (Electronics Mechanic)** 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): 21 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
21 Jan 2019
12:30 PM - 3:00 PM

Part B (Electronics Mechanic) 75 Questions • Answer Key

Q1 Part B (Electronics Mechanic)

Which of the following is NOT a function of the LED Driver?

A. Preventing damage to LEDs by Regulating the forward voltage (V_F)

B. Delivering a constant current to the LED

C. Preventing damage against EMI ✓

D. Avoiding thermal runaway

Q2 Part B (Electronics Mechanic)

If a JK FF toggles more than once during one clock cycle, it is called _____.

A. Pinging

B. Bouncing

C. Racing ✓

D. Spiking

Q3 Part B (Electronics Mechanic)

For currents as high as 2,000 Amps, which of the following types of fuses is the best choice?

A. LRC Fuse

B. HRC Fuse ✓

C. Nichrome Wire Fuse

D. Glass Cartridge Fuse

Q4 Part B (Electronics Mechanic)

Identify the main feature of power amplifiers from the options given below.

A. They have voltage amplifiers in the preceding stage. ✓

B. Their output impedance is high.

C. They cannot be operated without transformers.

D. Their output voltage is high.

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Q5 Part B (Electronics Mechanic)

Refractive Index of the medium is the ratio of _____.

- A. Velocity of light in the vacuum to the velocity of light in the medium ✓
- B. Velocity of light in the water to the velocity of light in the vacuum
- C. Velocity of light in water to the velocity of light in air
- D. Velocity of light in the medium to the Velocity of light in the vacuum

Q6 Part B (Electronics Mechanic)

Which one of the following circuits allows control of the SMPS output?

- A. LC filter circuit
- B. LCL filter circuit
- C. PWM circuit ✓
- D. EMI Filter circuit

Q7 Part B (Electronics Mechanic)

Why is the transformer of an SMPS smaller in size when compared to a transformer in a Linear Power Supply of similar rating?

- A. Because of smaller currents
- B. Because of lower PF
- C. Because of HF operation ✓
- D. Because of higher efficiency

Q8 Part B (Electronics Mechanic)

Which one of the following can be used to test the characteristics of an OFC?

- A. DTDR (Digital Time Domain Reflectometer)
- B. OTDR (Optical Time Domain Reflectometer) ✓
- C. OFCM (Optical Fiber Communication Module)
- D. OTMM (Optical Transceiver Monitoring Module)

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Q9 Part B (Electronics Mechanic)

What is the ratio of RMS Value to the Average Value is known as?

- A. Form factor ✓
- B. Effective value
- C. Peak factor
- D. Maximum value

Q10 Part B (Electronics Mechanic)

Which one of the gates mentioned below works as 'parity checker'?

- A. OR
- B. Ex-OR ✓
- C. AND
- D. NAND

Q11 Part B (Electronics Mechanic)

When the LED lights need a range of voltages to operate, which of the following drivers is best suited for the job?

- A. Constant Current ✓
- B. Constant Frequency
- C. Constant Voltage
- D. Constant Impedance

Q12 Part B (Electronics Mechanic)

Online UPS requires

- A. Only inverter
- B. Only battery
- C. Both rectifier and inverter ✓
- D. Only rectifier

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Q13 Part B (Electronics Mechanic)

In mobile phones, when a user puts the phone to his / her ears, the screen goes off. Which is the sensor used for this?

A. Motion sensor

B. Vibration sensor

C. Temperature sensor

D. Proximity sensor ✓

Q14 Part B (Electronics Mechanic)

What is the length of the antenna needed to a signal of 500 KHz frequency?

A. 1 Km

B. 6 Km

C. 600 m ✓

D. 100 m

Q15 Part B (Electronics Mechanic)

What is the purpose of using bypass diodes in the series connected solar panels?

A. Protection of shaded cells ✓

B. Increasing the current through shaded cells

C. To redirect light for shaded cells

D. To increase the resistance of shaded cells

Q16 Part B (Electronics Mechanic)

The number of input lines in a common BCD to seven segment decoder is _____.

A. 4 ✓

B. 16

C. 8

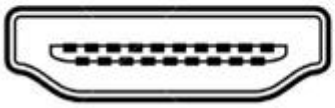
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Q17 Part B (Electronics Mechanic) HINDI - no English version saved

Identify the port shown in the image below.



A. FireWire

B. DVI

C. HDMI ✓

D. MIDI

Q18 Part B (Electronics Mechanic)

Based on which principle does a MC meter work?

A. Faraday's Current law

B. Faraday's Voltage law ✓

C. Ohm's law

D. Maxwell's law

Q19 Part B (Electronics Mechanic)

In the full-wave Rectifier, relation between peak value and rms value is:

A. $V_p = \sqrt{3}V_{rms}$

B. $V_p = \sqrt{4}V_{rms}$

C. $V_p = \sqrt{1.2}V_{rms}$

D. $V_p = \sqrt{2}V_{rms}$ ✓

Q20 Part B (Electronics Mechanic)

Which type of proximity sensor is not suitable for detecting 'Glass Bottles'?

A. Inductive type ✓

B. Photoelectric type

C. Capacitive type

D. Ultrasonic type

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Q21 Part B (Electronics Mechanic)

The emitter of which of the below mentioned transistors has electrons as the majority carriers?

A. N Channel

B. PNP

C. PNPN

D. NPN ✓

Q22 Part B (Electronics Mechanic)

In an Op Amp integrator circuit, what is done to limit the gain at 'Low Frequencies'?

A. A large resistor is connected across the feedback capacitor. ✓

B. A large capacitor is connected across the output.

C. A large resistor is connected in series with the input.

D. A small capacitor is connected in series with the input.

Q23 Part B (Electronics Mechanic)

Three capacitors each of 1μ F, 2μ F and 3μ F are connected in series. Identify the statement which holds TRUE for this combination.

A. The voltage across each capacitor is same.

B. Each capacitor stores a different charge.

C. The charge stored by each capacitor is same. ✓

D. Current flowing through each capacitor is different.

Q24 Part B (Electronics Mechanic)

Which frequency range is used for TV?

A. HF

B. UHF ✓

C. VLF

D. ULF

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Q25 Part B (Electronics Mechanic)

180 Coulombs of charge passes in a given time "t" through a wire of 1 ohm when connected to a 3 V DC supply. Identify the value of "t" from the options given.

A. 1 minute ✓

B. 1.5 minutes

C. 2 minutes

D. 0.5 minutes

Q26 Part B (Electronics Mechanic)

In computers, some area in the memory is reserved for high speed operations and storing frequently used instructions. What is the name of this type of memory?

A. SRAM

B. Cache ✓

C. Northbridge

D. Flash

Q27 Part B (Electronics Mechanic)

What are the logic levels in case of TTL logic using +5V as V_{CC}?

A. − 0.1 to 0.6 V for logic 0 and 1.7 V to V_{CC} for logic 1

B. 0 to 0.3 V for logic 0 and 0 V to V_{CC} for logic 1

C. − 0.3 to 0.3 V for logic 0 and 2.8 V to V_{CC} for logic 1

D. 0 to 0.8 V for logic 0 and 2 V to V_{CC} for logic 1 ✓

Q28 Part B (Electronics Mechanic)

FET is a _____.

A. Voltage controlled device ✓

B. Power controlled device

C. Current controlled device

D. Current and voltage controlled device

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Q29 Part B (Electronics Mechanic)

Which system allows the entire bandwidth to be available to each user at the same time?

A. GSM

B. CSMA

C. FDMA

D. CDMA ✓

Q30 Part B (Electronics Mechanic)

Astable multivibrator operating at 100 Hz has a discharge time of 2 ms. Find the duty cycle of the circuit

A. 50 %

B. 20 % ✓

C. 30 %

D. 10 %

Q31 Part B (Electronics Mechanic)

Which one of the following can be used as a photo detector in Fiber Optic Communication?

A. Tunnel diode

B. PIN Diode ✓

C. LED

D. LASER Diode

Q32 Part B (Electronics Mechanic)

The deflecting torque in a Moving-Iron meter is _____.

A. proportional to the square of the current ✓

B. inversely proportional to the current

C. inversely proportional to square of the current

D. proportional to the square of the voltage

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Q33 Part B (Electronics Mechanic)

The Octal equivalent of the hexadecimal number 100 is _____.

A. 200

B. 600

C. 300

D. 400 ✓

Q34 Part B (Electronics Mechanic)

The number of Flip Flops required for constructing a MOD 12 counter is _____.

A. 5

B. 6

C. 4 ✓

D. 3

Q35 Part B (Electronics Mechanic)

Push-Pull amplifiers are _____.

A. Class A amplifiers

B. Class B amplifiers ✓

C. Class AB amplifiers

D. Class C amplifiers

Q36 Part B (Electronics Mechanic)

The carrier of an AM signal has a power of 1,000 Watts. If the percentage of modulation is 80, what is the power in the upper sideband?

A. 160 Watts ✓

B. 640 Watts

C. 800 Watts

D. 320 Watts

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Q37 Part B (Electronics Mechanic)

The IC 74LS138 is a _____.

A. 8 bit subtractor

B. 8 line demultiplexer ✓

C. 8 bit adder

D. 8 line multiplexer

Q38 Part B (Electronics Mechanic)

If two 'equal' resistances are connected in parallel configuration, then the resultant resistance will be:

A. Half of the resistance value ✓

B. Multiplication of both the resistances

C. Double of the resistance value

D. Zero

Q39 Part B (Electronics Mechanic)

What is the peak to peak value of a sine waveform whose average value is 12.74 volts?

A. 30 V

B. 10 V

C. 40 V ✓

D. 20 V

Q40 Part B (Electronics Mechanic)

By using the AC coupling mode in a CRO _____.

A. any signal cannot be viewed on the display.

B. both AC and DC signals can be viewed on the display.

C. only AC signal can be viewed on the display. ✓

D. only DC signal can be viewed on the display.

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Q41 Part B (Electronics Mechanic)

In which frequency band does a 2GHz signal lie?

A. EHF

B. VHF

C. HF

D. UHF ✓

Q42 Part B (Electronics Mechanic)

Identify the frequency of the crystal used for outgoing calls in mobile phones.

A. 5.5 MHz

B. 99 MHz

C. 108 MHz

D. 26 MHz ✓

Q43 Part B (Electronics Mechanic)

When a Star Delta Starter is used with 3-phase squirrel cage motors, in which sequence is the connection made?

A. First Star, then Delta modes ✓

B. First Delta, then Star modes

C. First Star, then Delta and again Star mode

D. First Delta, then Star and again Delta modes

Q44 Part B (Electronics Mechanic)

The present state of the output of an SR flip flop is HIGH. If both its inputs become LOW, what would be the new state of the output?

A. Toggling

B. LOW

C. Unpredictable

D. HIGH ✓

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Q45 Part B (Electronics Mechanic)

TRIAC is similar to _____.

A. two diodes connected in series back to back.

B. two SCR connected in parallel. ✓

C. two diodes connected in parallel.

D. two SCR connected in series back to back.

Q46 Part B (Electronics Mechanic)

The primary voltage of a transformer is 200 volts and the secondary voltage is 50 volts. If the number of turns in the secondary winding is 100, the number of turns in the primary is _____.

A. 100

B. 200

C. 400 ✓

D. 800

Q47 Part B (Electronics Mechanic)

Which of the following modulation techniques uses two carriers?

A. TDM

B. FSK

C. ASK

D. QAM ✓

Q48 Part B (Electronics Mechanic)

Identify the WRONG statement from the options given below.

A. CFLs are used for backlighting the LCD screen of LED TV. ✓

B. LEDs are used for backlighting the LCD screen of LED TV.

C. Both LCD and LED TVs use an LCD screen for display.

D. In LED TV, the LEDs can be placed on the edges too.

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Q49 Part B (Electronics Mechanic)

Which of the following rectifiers needs a 'center tapped transformer'?

A. Full Wave Bridge Rectifier

B. Full Wave two-diode Rectifier ✓

C. Half Wave Rectifier

D. Two-phase Full Wave Rectifier

Q50 Part B (Electronics Mechanic)

Optical Time Domain Reflectometer is used to measure:

A. Dispersion in optical fibre

B. Eye Pattern

C. Wavelength

D. Loss in optical communication ✓

Q51 Part B (Electronics Mechanic)

The principle of magnetic attraction and repulsion works in:

A. PMMC Instruments

B. CRO

C. Digital Multimeter

D. MI Instruments ✓

Q52 Part B (Electronics Mechanic)

Which is the device commonly used in domestic fan speed control circuits?

A. DIAC

B. SCR

C. TRIAC ✓

D. SCS

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Q53 Part B (Electronics Mechanic)

Which of the following statements is true for Bi Colour LEDs?

A. Two different colour LEDs are connected in inverse parallel ✓

B. A special dopant is used for producing two colours in one LED

C. Two different colour LEDs are connected in series in the reverse direction

D. Two different colour LEDs are connected in series in the same direction

Q54 Part B (Electronics Mechanic)

Proximity sensors are used to _____.

A. Measure distance

B. Detect non-magnetic but conductive materials ✓

C. Measure strain

D. Measure temperature

Q55 Part B (Electronics Mechanic)

Power loss in a transformer is known as the _____.

A. difference of voltage between the secondary and the primary coils.

B. difference of power between the primary and the secondary coils. ✓

C. difference of current between the secondary and the primary coils.

D. addition of power in the secondary and the primary coils.

Q56 Part B (Electronics Mechanic)

Ten cells, each of 2 volts emf and 1 ohm internal resistance are connected in series. What is the current flowing through a resistance of 10 ohms connected across this combination of cells?

A. 1 mA

B. 1 A ✓

C. 10 mA

D. 100 mA

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Q57 Part B (Electronics Mechanic)

In which type of network topology computers are connected to a centralised Hub/ switch

A. Ring Topology

B. Star Topology ✓

C. Mesh topology

D. Bus Topology

Q58 Part B (Electronics Mechanic)

Which among the following is NOT the function of an Operating System?

A. Memory Management

B. Device Management

C. Data Analysis ✓

D. File Management

Q59 Part B (Electronics Mechanic)

Which of the following is NOT a type of Optocoupler?

A. Photo TRIAC type

B. Photo Resistor type ✓

C. Photo SCR type

D. Photo Transistor type

Q60 Part B (Electronics Mechanic)

Which of the following is NOT a type of trigger in Digital Storage Oscilloscope?

A. Video ✓

B. Pulse Width

C. Edge

D. Level

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Q61 Part B (Electronics Mechanic)

A LCR meter is used to measure _____.

A. Current

B. Voltage

C. Power

D. Inductance ✓

Q62 Part B (Electronics Mechanic)

Which of the following is used with LED lamps to focus its entire lighting output in one direction?

A. Aluminum Channels

B. Aluminum Panels

C. Parabolized Aluminum Reflector ✓

D. Parabolized Aluminum Refractor

Q63 Part B (Electronics Mechanic)

_____ is used to describe the information about the hue and saturation of a colour.

A. Sharpness

B. Chrominance ✓

C. Luminance

D. Phosphorescence

Q64 Part B (Electronics Mechanic)

Identify the main reason why an Ammeter should have very low internal resistance.

A. It should not burn.

B. It should decrease the circuit resistance.

C. It should not affect the circuit resistance. ✓

D. It should provide damping.

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Q65 Part B (Electronics Mechanic)

What is the size of internal data memory in a 8051 microcontroller?

A. 2,048 bytes

B. 128 bytes ✓

C. 256 bytes

D. 1,024 bytes

Q66 Part B (Electronics Mechanic)

A PC consuming 100 Watts is to be operated on a UPS. The UPS uses a 12 Volts, 100 AH battery. Assuming unity PF, what is the backup time of this unit?

A. 8 hours

B. 12 hours ✓

C. 24 hours

D. 16 hours

Q67 Part B (Electronics Mechanic)

Which of the following connectors is used for telephone / modem interface?

A. RJ11 ✓

B. RJ45

C. RJ67

D. RJ32

Q68 Part B (Electronics Mechanic)

How many dual purpose ports are there in the 8051 microcontroller?

A. 3

B. 1

C. 4 ✓

D. 2

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Q69 Part B (Electronics Mechanic)

An Op Amp has a Gain Bandwidth Product of 1 MHz. At what frequency will the gain of this Op Amp be equal to unity? Identify from the options given below.

A. 1,000 KHz ✓

B. 10 MHz

C. 100 KHz

D. 10 KHz

Q70 Part B (Electronics Mechanic)

The hexadecimal equivalent of the decimal number 4096 is _____.

A. 1,000 ✓

B. F100

C. F00

D. 1F0

Q71 Part B (Electronics Mechanic)

Which one of the following instructions is used to "Move Immediate Data to Register" in 8051?

A. MOV R_n, direct

B. MOV direct, R_n

C. MOV A, R_n

D. MOV R_n, #data ✓

Q72 Part B (Electronics Mechanic)

Which one of the following sensors produces a voltage output upon sensing temperature?

A. RTD

B. Strain Gauge

C. Thermocouple ✓

D. Thermostat

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Q73 Part B (Electronics Mechanic)

In the voltage amplifier _____.

A. output voltage is lower than the input voltage.

B. output voltage is larger than the input voltage. ✓

C. output voltage is zero.

D. output voltage is equal to the input voltage.

Q74 Part B (Electronics Mechanic)

What is the typical frequency and type of modulation used in an IR Remote control for TV?

A. 108.1 KHz, FM

B. 98 KHZ, PM

C. 38 KHz, PCM ✓

D. 98.1 MHz, AM

Q75 Part B (Electronics Mechanic)

The synchronous speed of an induction motor is 1,000 RPM. Find the percentage slip if its actual rotation speed is 980 RPM?

A. 8

B. 2 ✓

C. 4

D. 20

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