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RRB ALP 2018 CBT-2 Mechanic Radio and TV

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

English

Complete Paper · 75 Questions · Part B (Mechanic Radio and TV) Section · Official Answer Key

About this Compilation

This booklet contains the complete question paper of the **RRB ALP 2018 CBT-2 Mechanic Radio and TV** examination in **English** (**Part B (Mechanic Radio and TV)** 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).

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 (Mechanic Radio and TV)

75 Questions • Answer Key

Q1 Part B (Mechanic Radio and TV)

Which of the following quantities is the same for the primary and secondary of a transformer?

A. current

B. frequency ✓

C. phase

D. voltage

Q2 Part B (Mechanic Radio and TV)

A DVD uses the _____ method to store and read data.

A. Hall effect

B. electrical

C. optical ✓

D. magnetic

Q3 Part B (Mechanic Radio and TV)

When a transistor is biased such that its Base current is greater than zero and its collector-to-emitter voltage is less than 0.2 V, it is operating in the _____ region.

A. cut-off

B. active

C. breakdown

D. saturation ✓

Q4 Part B (Mechanic Radio and TV)

A CRO displays a sine waveform which spans 3 cycles in 6 horizontal divisions. If the time base switch is set to 1 ms /div, what is the frequency of this signal which is being measured?

A. 20 Hz

B. 200 Hz

C. 50 Hz

D. 500 Hz ✓

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Q5 Part B (Mechanic Radio and TV)

In an Op-Amp voltage regulator, the regulating element is connected:

A. across the load

B. across the Zener diode

C. in series with the Zener diode

D. in series with the load ✓

Q6 Part B (Mechanic Radio and TV)

When simplified, the Boolean expression A+AB results in _____.

A. AB

B. B

C. A+1

D. A ✓

Q7 Part B (Mechanic Radio and TV)

In a motor speed control using TRIAC and UJT, the potentiometer controls:

A. the thyristor gate current

B. the frequency of the pulses from UJT ✓

C. the gate voltage in the thyristor circuit

D. the thyristor anode voltage

Q8 Part B (Mechanic Radio and TV)

The regenerative process where the collector junction temperature increases the collector current and vice versa is called _____.

A. oscillation

B. positive feedback

C. temperature stability

D. thermal runaway ✓

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Q9 Part B (Mechanic Radio and TV)

In wave propagation, fading refers to:

A. the changing of the colour

B. the changing of the wavelength

C. the shifting of frequency

D. the reduction in signal strength ✓

Q10 Part B (Mechanic Radio and TV)

Which stage in an AM transmitter is also known as Harmonic Generator?

A. Carrier oscillator

B. Frequency multiplier ✓

C. Power amplifier

D. AFC circuit

Q11 Part B (Mechanic Radio and TV)

If the height of an antenna increases, the angle of radiation _____

A. Does not change

B. Becomes a zero

C. Increases

D. Decreases ✓

Q12 Part B (Mechanic Radio and TV)

Which of the following types of microphone requires an external power source to operate?

A. Paper microphone

B. Dynamic microphone

C. Ribbon microphone

D. Condenser microphone ✓

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Q13 Part B (Mechanic Radio and TV)

_____ is the input of detector stage?

A. Audio signal

B. IF signal ✓

C. RF signal

D. carrier wave

Q14 Part B (Mechanic Radio and TV)

In a PA system, a ____ is used to adjust the amplitude of different frequencies to achieve the desired quality of sound output.

A. filter

B. attenuator

C. amplifier

D. equaliser ✓

Q15 Part B (Mechanic Radio and TV)

Why crystal receiver has poor selectivity?

A. No tuned circuit is used ✓

B. No battery is used

C. No loud speaker is used

D. it has long antenna

Q16 Part B (Mechanic Radio and TV)

Which one of the following does NOT affect the value of the capacitance of a parallel plate capacitor?

A. Surface area of the plates

B. Permittivity of the dielectric used

C. Voltage applied to the capacitor ✓

D. Distance between the plates

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Q17 Part B (Mechanic Radio and TV)

In a mixer, which control determines the amount of signal to be sent to the right or left channels?

A. PAN ✓

B. Filter

C. Equaliser

D. Treble

Q18 Part B (Mechanic Radio and TV)

An ideal 220 VA step-down transformer is connected to a 220 V supply in the primary. If its turns ratio is 4:1, then the value of the secondary current will be_____.

A. 1 A

B. 22 A

C. 4 A ✓

D. 11 A

Q19 Part B (Mechanic Radio and TV)

A 3.1 sound system has _____.

A. 3 speakers and one tweeter

B. bass, treble, and speaker

C. 3 speakers and one subwoofer ✓

D. only 3 speakers

Q20 Part B (Mechanic Radio and TV)

In a common-anode seven-segment display, what will be displayed if all the seven data inputs are at logic ''0''?

A. 8 ✓

B. 4

C. 2

D. 0

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Q21 Part B (Mechanic Radio and TV)

_____ electrons flow every second in ten amperes of current.

A. 31.4×10^{18}

B. 62.4×10^{18} ✓

C. 62.4×10^{8}

D. 31.4×10^{8}

Q22 Part B (Mechanic Radio and TV)

An advantage of modulation is the use of _____.

A. smaller circuit

B. lesser power

C. smaller antenna ✓

D. lower bandwidth

Q23 Part B (Mechanic Radio and TV)

Which of the following is NOT a type of wireless communication technology?

A. Infrared communication

B. OFC communication ✓

C. Bluetooth communication

D. Satellite communication

Q24 Part B (Mechanic Radio and TV)

A discriminator is basically a _____.

A. AM modulator

B. RS flip flop

C. Wein bridge oscillator

D. FM detector ✓

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Q25 Part B (Mechanic Radio and TV)

In a microprocessor, which is the register that always holds the result of an operation?

A. Buffer

B. Data bus

C. Instruction register

D. Accumulator ✓

Q26 Part B (Mechanic Radio and TV)

When the communication allows simultaneous talking and listening by two parties over the same channel, it is called _____.

A. half duplex

B. simplex

C. biplex

D. full duplex ✓

Q27 Part B (Mechanic Radio and TV)

Which component in a TV is responsible for generating the high voltage sawtooth signals at a relatively high frequency?

A. Fly back transformer ✓

B. UPS transformer

C. SMPS transformer

D. Isolation transformer

Q28 Part B (Mechanic Radio and TV)

A bridge rectifier receives its input from a 4: 1 step down transformer connected 220 V AC. Identify the PIV of the bridge rectifier from the given options.

A. 77.7 V

B. 55 V ✓

C. 63.6 V

D. 141.4 V

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Q29 Part B (Mechanic Radio and TV)

When two resistors of equal value are connected across a 220 V DC supply, the current through each resistor is 1 A. Find the colour code of the resistors.

A. Black, Brown, Red

B. Red, Red, Brown ✓

C. Red, Red, Red

D. Brown, Black, Red

Q30 Part B (Mechanic Radio and TV)

In a direct-coupled amplifier, the gain falls at high frequencies mainly due to _____.

A. Power supply

B. Coupling capacitors

C. Filtering issues

D. Stray capacitances ✓

Q31 Part B (Mechanic Radio and TV)

Which of the following is NOT a topology of an SMPS?

A. DC to DC converter

B. Reverse converter ✓

C. Forward converter

D. AC to DC converter

Q32 Part B (Mechanic Radio and TV)

Identify the features of CC configuration from the options given below.

A. Lowest input impedance and highest voltage gain.

B. Highest input impedance and highest current gain. ✓

C. Lowest input impedance and lowest voltage gain.

D. Highest input impedance and highest voltage gain.

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Q33 Part B (Mechanic Radio and TV)

What is the full form of DTS?

A. Direct Transmission for Satellite Services

B. Digital Transmission Systems Format for Video

C. Digital Theatre Systems Format for Video

D. Digital Theatre Systems Format for Audio ✓

Q34 Part B (Mechanic Radio and TV)

In an AM radio receiver, for an RF signal of 1545 kHz, the value of the local oscillator frequency will be _____.

A. 2,455 kHz

B. 2,000 kHz ✓

C. 455 kHz

D. 1,455 kHz

Q35 Part B (Mechanic Radio and TV)

In which part of a cell does oxidation take place?

A. Cathode

B. Anode ✓

C. Electrolyte

D. Container

Q36 Part B (Mechanic Radio and TV)

AM broadcast transmits _____

A. Only side bands

B. Both side bands and carrier ✓

C. Carrier and lower side band

D. Only carrier

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Q37 Part B (Mechanic Radio and TV)

The wavelength of the laser used in a DVD player is _____.

A. 820 nm

B. 540 nm

C. 780 nm

D. 650 nm ✓

Q38 Part B (Mechanic Radio and TV)

The geostationary orbit is_____ km away from the surface of the earth.

A. 2,950

B. 38,000

C. 2,200

D. 36,000 ✓

Q39 Part B (Mechanic Radio and TV)

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

A. Chrominance ✓

B. Intensity

C. Luminance

D. Contrast

Q40 Part B (Mechanic Radio and TV)

_____ coupling is a way to provide impedance matching in the AF amplifiers.

A. Direct

B. Resistive

C. Transformer ✓

D. RC

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Q41 Part B (Mechanic Radio and TV)

Which one of the following is referred to as a free one-shot circuit?

A. Schmitt trigger

B. Astable multivibrator

C. Monostable multivibrator ✓

D. Bistable multivibrator

Q42 Part B (Mechanic Radio and TV)

The bandwidth of a TV channel in India is _____.

A. 5.5 MHz

B. 15 MHz

C. 10.8 MHz

D. 7 MHz ✓

Q43 Part B (Mechanic Radio and TV)

The binary equivalent of the octal number 456 is_____.

A. 101011110

B. 100101110 ✓

C. 101001101

D. 100111101

Q44 Part B (Mechanic Radio and TV)

The band width of an A.M radio receiver?

A. 5MHz

B. 20 KHz

C. 1KHz

D. 10KHz ✓

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Q45 Part B (Mechanic Radio and TV)

Which type of loss can be reduced in a transformer by increasing the diameter of the conductor?

A. Hysteresis loss

B. Eddy current loss

C. Magnetic loss

D. Copper loss ✓

Q46 Part B (Mechanic Radio and TV)

According to Kirchoff's current law,:

A. the sum of the currents entering a node = the sum of the currents leaving the node ✓

B. the sum of the potential differences across all elements =0

C. the total current is directly proportional to the applied voltage

D. the sum total of all the currents in a loop = 0

Q47 Part B (Mechanic Radio and TV)

TV remote controls commonly use _____ to communicate with the TV.

A. UV transmitter

B. Bluetooth transmitter

C. Infrared LED ✓

D. a laser diode

Q48 Part B (Mechanic Radio and TV)

Identify the terminals in a three-point starter from the options given below.

A. Line, field and NLR terminals

B. Line, NLR and armature terminals

C. Line, field and armature terminals ✓

D. NLR, field and armature terminals

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Q49 Part B (Mechanic Radio and TV)

If the _____ section in a TV has failed, the result is "No Sound, No Picture".

A. sync separator

B. vertical output

C. IF output

D. horizontal transistor ✓

Q50 Part B (Mechanic Radio and TV)

What are the speakers that handle the higher range of audio frequencies called?

A. Bass speakers

B. Box speakers

C. Woofers

D. Tweeters ✓

Q51 Part B (Mechanic Radio and TV)

The value of the first IF in double conversion FM Radio receivers is _____.

A. 470 kHz

B. 10.7 MHz ✓

C. 455 kHz

D. 108 MHz

Q52 Part B (Mechanic Radio and TV)

What is a wave trap?

A. High pass filter

B. Wide band amplifier

C. Low pass filter

D. Resonance circuit ✓

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Q53 Part B (Mechanic Radio and TV)

What is the function of a shunt resistor used for extending the range of an ammeter?

A. To increase the PF.

B. To bypass the additional current. ✓

C. To divide the additional voltage.

D. To increase the meter resistance.

Q54 Part B (Mechanic Radio and TV)

The conductive coating on the outer surface of a picture tube is called _____.

A. enamel

B. metal primer

C. liquid conductor

D. Aquadag ✓

Q55 Part B (Mechanic Radio and TV)

The IC CA810 can be used as power amplifier in many applications. Which is the circuit this IC cannot be used?

A. Power driving circuits ✓

B. Television receivers

C. Small PA systems

D. Radio receiver and tape recorders

Q56 Part B (Mechanic Radio and TV)

One of the criteria for oscillations to occur in an amplifier is that:

A. the amplifier output impedance must be zero

B. the amplifier must be in the cut-off state

C. the amplifier must have a variable power supply

D. the loop gain must be slightly greater than unity ✓

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Q57 Part B (Mechanic Radio and TV)

A series resonant circuit consists of a resistor of 10 Ω, a capacitor of 1 μF and an inductor of 1 mH. What is the value of the current flowing through this circuit at resonance if the applied voltage is 100 V AC?

- A. 10 A ✓
- B. 100 mA
- C. 1 A
- D. 10 mA

Q58 Part B (Mechanic Radio and TV)

The shape of the time base signal of a CRO is generally a _____.

- A. sawtooth wave ✓
- B. triangle wave
- C. square wave
- D. sine wave

Q59 Part B (Mechanic Radio and TV)

In a transistor, identify the terminal with the highest doping from the options given below.

- A. Intrinsic zone
- B. Base
- C. Emitter ✓
- D. Collector

Q60 Part B (Mechanic Radio and TV)

What is the name of the device that have three terminals and two layers?

- A. NPN transistor
- B. UJT ✓
- C. PNP transistor
- D. FET

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Q61 Part B (Mechanic Radio and TV)

Which type of memory needs to be regularly refreshed?

- A. DRAM ✓
- B. ROM
- C. CMOS
- D. SRAM

Q62 Part B (Mechanic Radio and TV)

The basic components of an optocoupler are _____.

- A. LED and LDR
- B. crystal and LDR
- C. LED and phototransistor ✓
- D. photodiode and crystal

Q63 Part B (Mechanic Radio and TV)

In Silicon Controlled Rectifier (SCR):

- A. holding current < latching current ✓
- B. holding current = latching current
- C. holding current > latching current
- D. holding current = 0.6 V / forward resistance

Q64 Part B (Mechanic Radio and TV)

In an FM radio receiver, which section uses the limiter circuit at its input?

- A. AF amplifier
- B. Detector ✓
- C. Mixer
- D. AGC

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Q65 Part B (Mechanic Radio and TV)

_____ is the digital 2-input logic gate whose output is HIGH only when both its inputs are the same.

A. AND gate

B. EX NOR Gate ✓

C. EX OR Gate

D. NAND Gate

Q66 Part B (Mechanic Radio and TV)

What will happen to the output voltage in a series regulator, when temperature increases?

A. Remain constant

B. Equals input voltage

C. Decreases

D. Increases ✓

Q67 Part B (Mechanic Radio and TV)

Which of the following input conditions of an RS flip flop will result in an SET condition at the output?

A. R= 1, S=0

B. R= 0, S=0

C. R= 0, S=1 ✓

D. R= 1, S=1

Q68 Part B (Mechanic Radio and TV)

Two amplifiers each of gain 10 and 25 are cascaded. If the input voltage to the first amplifier is 10 mV, the output of the second stage will be _____.

A. 125 V

B. 25 V

C. 100 V

D. 2.5 V ✓

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Q69 Part B (Mechanic Radio and TV)

Which of the following statements is **TRUE** in case of filters used with rectifiers?

A. Capacitors and inductors are both connected in shunt with the output.

B. Capacitors are connected in shunt and inductors in series with the output. ✓

C. Capacitors and inductors are both connected in series with the output.

D. Capacitors are connected in series and inductors in shunt with the output.

Q70 Part B (Mechanic Radio and TV)

In satellite communication, the downlink frequency is always_____ the uplink frequency.

A. lower than ✓

B. equal to

C. higher than

D. independent of

Q71 Part B (Mechanic Radio and TV)

Reception of a station in a wrong position is caused by _____

A. Defective gang condenser

B. Misalignment of antenna coil

C. Oscillator coil ✓

D. Misalignment of I.F.T

Q72 Part B (Mechanic Radio and TV)

In television, one half of horizontal pixels rows are refreshed in one cycle and the other half in the next cycle. This process is known as _____.

A. interlaced scanning ✓

B. sequential scanning

C. alternate scanning

D. differential scanning

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Q73 Part B (Mechanic Radio and TV)

If a receiver is able to detect and amplify even very weak signals, its _____ considered to be very good.

A. bandwidth

B. sensitivity ✓

C. fidelity

D. selectivity

Q74 Part B (Mechanic Radio and TV)

In an AM with m=1, the power in one sideband is:

A. the same as the total power

B. one-tenth of the total power

C. one-fourth of the total power ✓

D. three-fourth of the total power

Q75 Part B (Mechanic Radio and TV)

Why FM is popular compared to the AM _____.

A. Requires simple transmission and reception equipment's

B. Easier to generate and detect

C. Occupies less band width

D. Less sensitivity to noise ✓

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