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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 · Question Paper

English

Complete Paper · 175 Questions · 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**, 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

RRB ALP 2018 CBT-2 Mechanic Radio and TV Set 1 · 23 Jan 2019 · 4:30 PM - 7:00 PM · English

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Part A — 100 Questions • Answer Key

Q1 Part A

Select the option that is related to the third number in the same way as the second number is related to the first number.

-9/11 : 11/9 :: 13/2 : ?

A. 2/13

B. 3/7

C. -7/3

D. -2/13 ✓

Q2 Part A

A cylindrical wire of length L and radius r has a resistance of R. The resistance of another wire of the same material but thrice its length and one-third its radius will be_____.

A. R

B. 3R

C. 27R ✓

D. 9R

Q3 Part A

_____ protection must be worn whenever noise levels exceed the noise exposure standard.

A. Hearing ✓

B. Foot

C. Head

D. Eye

Q4 Part A

What is the least number which when doubled is perfectly divisible by 7, 12 and 15?

A. 210 ✓

B. 220

C. 215

D. 214

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Q5 Part A

A sum of ₹2,000 was spent in buying a pair of trousers. The sum spent was 2/5th of the total money Shashi had with her. How much was the total money she had?

A. ₹5,000 ✓

B. ₹4,750

C. ₹4,250

D. ₹4,000

Q6 Part A

If, '+' represents '×', '-' represents '+', '×' represents '÷' and '÷' represents '-', then find the value of the following expression.
$9 \times 3 + 6 \div 2 = ?$

A. 10

B. 20

C. 16 ✓

D. 12

Q7 Part A

If a body is NOT homogeneous, then its density is a function of its _____.

A. velocity

B. position ✓

C. pressure

D. acceleration

Q8 Part A

If a machine overcomes a load 'L' and the distance travelled by the load is 'Ld', the work done by the load will be _____.

A. $L \times Ld$ ✓

B. $\frac{L}{Ld}$

C. $\frac{1}{L \times Ld}$

D. $\frac{Ld}{L}$

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Q9 Part A

The effort applied to move a load is 15 units and the machine advantage is observed to be 3. Find the load.

A. 45 units ✓

B. 5 units

C. 15 units

D. 3 units

Q10 Part A

Choose the figure that is different from the rest.

A. 

B.  ✓

C. 

D. 

Q11 Part A

Name the scientist who discovered bacteria.

A. AV Leeuwenhoek ✓

B. James Chadwick

C. Eugen Goldstein

D. Robert Koch

Q12 Part A

A sum of ₹10,000 amounts to ₹11,449 in 2 years, when the interest is compounded annually. The interest rate percent per annum is:

A. 1%

B. 7% ✓

C. 8%

D. 6%

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Q13 Part A

If $\sin\Theta = 15/17$, then $\cot\Theta =$?

A. $\frac{8}{15}$ ✓

B. $\frac{8}{17}$

C. $\frac{17}{15}$

D. $\frac{15}{8}$

Q14 Part A

A got ₹80 as his share of profit where the total profit was ₹240 and the ratio of profit distribution between A and B was x : 2. What is the value of x?

A. 1 ✓

B. 5

C. 4

D. 2

Q15 Part A

Identify the material having high coefficient of volume expansion.

A. Alcohol ✓

B. Brass

C. Glass

D. Water

Q16 Part A

Two planes E and F start flying from the same point. E flies 7 km west, then turns to its left and flies 15 km. Meanwhile F flies 11 km east and turns right and flies 15 km. Where is F with respect to E?

A. F is 18 km east of E ✓

B. F is 4 km east of E

C. F is 18 km west of E

D. F is 4 km west of E

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Q17 Part A

The effort in a class 1 lever is in _____ direction(s).

A. one ✓

B. two

C. multiple

D. three

Q18 Part A

If G + H means G is daughter of H, G - H means G is sister H and G * H means G is husband of H, which of the following shows that I is the daughter of H?

A. I * J - F + H

B. I - J * F + H

C. I - J + F * H ✓

D. I + J - F * H

Q19 Part A

If C $ D means C is daughter of D, C & D means C is mother of D and C % D means C is son of D, then what does W $ X & Y % Z mean?

A. Z is wife of W

B. Z is mother of W

C. Z is daughter of W

D. Z is father of W ✓

Q20 Part A

What is the curved surface area of a hemisphere whose radius is 7 cm? (take $\pi = 22/7$)

A. 924 cm^2

B. 154 cm^2

C. 308 cm^2 ✓

D. 616 cm^2

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Q21 Part A

The ages of X and Y are in the ratio 4 : 7. Three years earlier, the ratio of their ages was 1 : 2. What is the difference between their current ages (Y - X)?

A. 6

B. 3

C. 7.5

D. 9 ✓

Q22 Part A

A software program that has been developed to harm other computers is called a/an _____.

A. malware ✓

B. server

C. LAN

D. operating system

Q23 Part A HINDI - no English version saved

नीचे एक वक्तव्य और दो अनुमान I और II दिए गए हैं। आपको तय करना है कि कौनसा/से अनुमान वक्तव्य के अनुसार तार्किकतः सही है/हैं।

वक्तव्य: धूप में मनुष्य शरीर विटामिन D उत्पन्न करता है।

अनुमान I: भोजन द्वारा प्राप्त न करने पर भी मनुष्य शरीर में विटामिन D होगा।
अनुमान II: वैश्विक जनसंख्या का एक बड़ा हिस्सा विटामिन D की कमी से ग्रस्त है।

A. अनुमान I और अनुमान II दोनों सही है दोनों

B. न अनुमान I सही है न अनुमान II

C. केवल अनुमान II सही है

D. केवल अनुमान I सही है ✓

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Q24 Part A

An airplane flies at the speed of 50 m/s. How much distance (in km) will it cover in a flight of 5 hours?

A. 850

B. 880

C. 895

D. 900 ✓

Q25 Part A

A salesperson starts from his office and drives 2 km east, then turns north and drives 7 km, then turns to his right and drives 6 km, then turns south and drives 7 km. Where is he now with respect to his starting position?

A. 4 km west

B. 8 km west

C. 8 km east ✓

D. 4 km east

Q26 Part A

If $5050 \times 0.5x = 25250$, then $2505 \div x^2 = ?$

A. 25.05 ✓

B. 2.505

C. 250.5

D. 0.2505

Q27 Part A

Substances that are broken down by biological processes are said to be _____.

A. non-reusable

B. biodegradable ✓

C. non-biodegradable

D. reusable

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Q28 Part A

Two resistors of 2 Ω and 6 Ω are connected in series and this combination is connected across a 12 V battery. Find the current in the 6 Ω resistor.

A. 0.5 A

B. 1.5 A ✓

C. 2.5 A

D. 3.5 A

Q29 Part A

The abbreviation AC in an engineering drawing stands for _____.

A. Across Corners ✓

B. Aerial Cut

C. Air Conditioning

D. Attached Circle

Q30 Part A

Two resistors of 2 Ω and 6 Ω are connected in series and this combination is connected across a 12 V battery. Find the power supplied by the battery.

A. 14 W

B. 18 W ✓

C. 16 W

D. 10 W

Q31 Part A

JPEG stands for _____.

A. Joint Program Executing Group

B. Joint Program Experimental Group

C. Joint Photographic Experts Group ✓

D. Joint Program Experts Group

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Q32 Part A

If the width of a standard engineering drawing sheet is 841 mm, then its length would be _____ mm.

A. 1216

B. 1189 ✓

C. 1000

D. 1250

Q33 Part A

In engineering drawing, the letters LH signifies _____.

A. Low Heat

B. Level Hide

C. Left Hand ✓

D. Limit of Height

Q34 Part A

A machine was bought for ₹1,500 and a repairing charge of ₹100 was paid afterwards. At what price should it be sold to gain a profit of 25%?

A. ₹1,960

B. ₹2,000 ✓

C. ₹1,920

D. ₹2,040

Q35 Part A

Which two signs should be interchanged to make the given equation correct?

$9 \div 3 + 8 \times 2 - 15 = 2$

A. + and - ✓

B. × and -

C. ÷ and -

D. + and ×

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Q36 Part A

Where is the Headquarters of UNESCO located?

A. Geneva

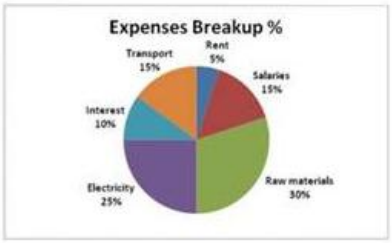
B. New York City

C. Paris ✓

D. Washington DC

Q37 Part A

The pie chart shows the breakup in percentages of the various expenses of a Company. Study the diagram and answer the following question.



What is the interest expense if total expenses are ₹25,000 approximately?

A. ₹5,000

B. ₹2,500 ✓

C. ₹9,000

D. ₹1,800

Q38 Part A

What is 80% of 50% of 90?

A. 30

B. 36 ✓

C. 32

D. 34

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Q39 Part A

An object weighs X units on the earth. If we take the same object to the moon, its weight there will be _____.

A. more than X

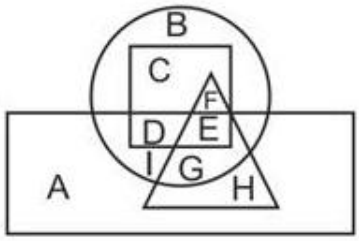
B. equal to X

C. zero

D. less than X ✓

Q40 Part A

In the following figure, square represents Chinese, triangle represents dancers, circle represents male and rectangle represents architects. Which set of letters represents dancers who are male?



A. GEF ✓

B. DEF

C. IGH

D. DEIG

Q41 Part A

How many medals did India win in Rio Olympics, 2016?

A. 5

B. 3

C. 2 ✓

D. 4

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Q42 Part A

If $x = \sqrt{125}\,X\,\sqrt{30}\,X\sqrt{6}$, then x is equal to:

A. 175

B. 150 ✓

C. 136

D. 125

Q43 Part A

An article was sold for ₹12,000. Had a discount of 15% been offered, a profit of 2% would have been made. What was the cost price?

A. ₹10,000 ✓

B. ₹10,200

C. ₹10,800

D. ₹11,000

Q44 Part A

Greater the value of _____ of a material, the more rapidly it will conduct heat.

A. melting point

B. thermal conductivity ✓

C. regelation

D. latent heat

Q45 Part A

In an examination, the highest score and the lowest score differed by 55 and the higher one was 9/4 times the lower one. What is the lowest score?

A. 36

B. 44 ✓

C. 40

D. 48

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Q46 Part A

A series is given, with one number missing. Choose the correct alternative from the given ones that will complete the series.

1.14, 1.28, 1.42, ?, 1.70, 1.84

A. 1.54

B. 1.68

C. 1.56 ✓

D. 1.62

Q47 Part A

What is the work that needs to be done to increase the speed of a 1 kg ball from 2 m/s to 4 m/s?

A. 10 J

B. 12 J

C. 6 J ✓

D. 8 J

Q48 Part A

A 200 g block of iron was heated from 30°C to 60°C How much heat was transferred to the block (specific heat of iron is 450 $Jkg^{-1}K^{-1}$)?

A. 2700 J ✓

B. 27 J

C. 270 J

D. 6000 J

Q49 Part A

It is mainly due to the gravitational effect of the _____ on the rotating earth that the level of water in the sea rises and falls.

A. Moon ✓

B. Venus

C. Sun

D. Mercury

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Q50 Part A

What is the unit's digit in $3^{66} \times 6^{41} \times 7^{53}$

A. 3

B. 7

C. 6

D. 8 ✓

Q51 Part A

Given below are two statements, followed by two conclusions, I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follow(s) from the given statements.

Statement 1: No quadrilaterals are polygons.
Statement 2: All polygons are rhombuses.

Conclusion I: Some rhombuses are quadrilaterals.
Conclusion II: Some rhombuses are polygons.

A. Neither I nor II follows

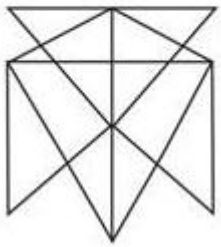
B. Only conclusion II follows ✓

C. Both I and II follow

D. Only conclusion I follows

Q52 Part A

What is the minimum number of lines required to make the given image?



A. 11 ✓

B. 12

C. 9

D. 10

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Q53 Part A HINDI - no English version saved

आपको एक प्रश्न और दो वक्तव्य दिए गए हैं। पता कीजिए कि प्रश्न का उत्तर देने के लिए कौनसा/से वक्तव्य आवश्यक/पर्याप्त हैं।

प्रश्न: स्टोर द्वारा सोप पर प्रदान की जा रही छूट कितनी थी?
वक्तव्य:
I) स्टोर तीन की खरीद पर 1 साबुन मुफ्त दे रहा है।
II) ₹36 के साबुन की खरीद पर ₹10 की छूट दी जा रही है।

A. या I पर्याप्त है या II ✓

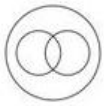
B. केवल I पर्याप्त है जबकि केवल II पर्याप्त नहीं है

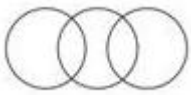
C. केवल II पर्याप्त है जबकि केवल I पर्याप्त नहीं है

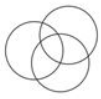
D. न I पर्याप्त है न II

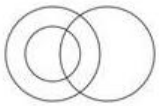
Q54 Part A

Which of the following Venn diagrams best represents the relationship between Indians, doctors and women?

A. 

B. 

C.  ✓

D. 

Q55 Part A

A car covers 400 m in 20 seconds. Find the average speed (in km/hr) of the car.

A. 108

B. 72 ✓

C. 124

D. 36

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Q56 Part A

A can do 2/5 of a work in 10 days. B can do ½ of the same work in 10 days. They worked together for 5 days and then A left. In how many days will B finish the remaining work?

A. 10

B. 11 ✓

C. 9

D. 8

Q57 Part A

Which one of these is a harvest festival?

A. Teej

B. Deepawali

C. Janmashtami

D. Onam ✓

Q58 Part A

If straight lines are drawn from various points on the contour of an object to meet a plane, the figure obtained on the plane is called the _____ of the object.

A. animation

B. dimensioning

C. development

D. projection ✓

Q59 Part A

Two resistors, one of 12 Ω and the other of 24 Ω are connected in parallel. This combination is connected in series with a 22 Ω resistor and a 12 V battery. The current in the 12 Ω resistor is_____.

A. (2/15) A

B. (6/15) A

C. (4/15) A ✓

D. (8/15) A

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Q60 Part A

A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.
OOOOOX, OOOOXX, OOOXXX, OOXXXX, ?

A. OOXXXX
B. XXXXXX
C. OOXXXXX
D. OXXXXX ✓

Q61 Part A

Identify the material having low coefficient of volume expansion

A. Iron ✓
B. Mercury
C. Aluminium
D. Brass

Q62 Part A

Given below are some letters, that each of these letters has a corresponding number. Select the combination of numbers from the options so that the jumbled letters arranged accordingly will form a meaningful English word.

H T R U O A
1 2 3 4 5 6

A. 6,4,2,1,5,3 ✓
B. 2,1,5,3,4,6
C. 3,4,5,2,1,6
D. 1,6,2,4,5,3

Q63 Part A

Kuchipudi has its roots in which Indian State?

A. Kerala
B. Andhra Pradesh ✓
C. Himachal Pradesh
D. Arunachal Pradesh

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Q64 Part A

If a body has a specific gravity of less than 1, then it will float in/on _____.

A. mercury

B. liquids

C. air

D. water ✓

Q65 Part A

RK Narayan is famous for his book _____.

A. The Toom on the Roof

B. A Suitable Boy

C. Two Lives

D. Malgudi Days ✓

Q66 Part A

A body starts from rest. Its displacement is proportional to _____ when its acceleration is constant.

A. velocity

B. time squared ✓

C. work

D. time

Q67 Part A

86°F is equal to _____ .

A. 10°C

B. 20°C

C. 34°C

D. 30°C ✓

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Q68 Part A

Reflection of point (-2, -6) on the Y-axis is:

A. (-2, 6)

B. (-6, -2)

C. (2, 6)

D. (2, -6) ✓

Q69 Part A

Name the painter of the famous painting, 'Mahishasura'.

A. MF Hussain

B. Tyeb Mehta ✓

C. Amrita Sher-Gil

D. Raja Ravi Verma

Q70 Part A

Velocity ratio of simple machine is the ratio of distance travelled by the _____ to the distance travelled by the _____ in the machine.

A. effort; effort

B. load; effort

C. load; load

D. effort; load ✓

Q71 Part A

In a code language, 295 means 'water is liquid', 549 means 'oil is liquid' and 824 means 'oil on water'. Find the code for 'on'.

A. 8 ✓

B. 5

C. 4

D. 2

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Q72 Part A

Which Indian cricketer received the Padma Bhushan in 2018?

A. Saurav Ganguly

B. Virat Kohli

C. Sachin Tendulkar

D. MS Dhoni ✓

Q73 Part A

What is the distance between the points (4, 3) and (3, -2)?

A. $\sqrt{24}$

B. $\sqrt{26}$ ✓

C. 5

D. 6

Q74 Part A

Unscramble the letters in the words given below and find the odd word out.

A. FLOW

B. ERTIG

C. ILNO

D. WCO ✓

Q75 Part A

The Ajanta Caves in Maharashtra feature paintings and sculptures that depict _____ tales?

A. Arabic

B. Islamic

C. Buddhist ✓

D. Maratha

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Q76 Part A

Safety boots or shoes must be worn in designated areas to protect your _____ from falling objects.

A. feet ✓

B. head

C. ear

D. eye

Q77 Part A

A wire of length l and radius r has a resistance R. The resistance of another wire made of the same material but having half its length and half its radius will be ___.

A. 2R ✓

B. R

C. 4R

D. R/2

Q78 Part A

$\sec 45° - \tan 60° = ?$

A. $-\sqrt{3} + \sqrt{2}$ ✓

B. $-\sqrt{3} - \sqrt{2}$

C. $\frac{\sqrt{3}}{2}$

D. $\sqrt{3} + \sqrt{2}$

Q79 Part A

Tap M and N can together fill a cistern in 48/13 minutes. N alone can fill it in 6 minutes. How much time will M alone take to fill the cistern?

A. 9 minutes

B. 9.4 minutes

C. 8.6 minutes

D. 9.6 minutes ✓

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Q80 Part A

Two resistors of 10 Ω and 20 Ω are connected in series and this combination is connected across a 30 V supply voltage. Find the voltage across the 10 Ω resistor.

A. 20 V

B. 15 V

C. 5 V

D. 10 V ✓

Q81 Part A

What is the median of 8, 5, 7, 9, 11, 6, 10 ?

A. 9

B. 7

C. 8 ✓

D. 10

Q82 Part A

A brass rod (thermal conductivity 109 J/s m K) has an area of cross section 0.04 m^2 and length 20 cm. If the two end of the rod are maintained at a temperature difference of 200°C, the rate of heat flow through the rod is _____.

A. 4.36 kJ/s ✓

B. 2.32 kJ/s

C. 3.42 kJ/s

D. 5.80 kJ/s

Q83 Part A

I, J, K and L are sitting in a row. L and I are sitting next to each other and I and K are at the ends. Who is sitting next to J?

A. L and I

B. K and L ✓

C. Only L

D. Only K

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Q84 Part A

Find the odd group of letters from the given alternatives.

A. PQR

B. EFG

C. HJL ✓

D. VWX

Q85 Part A

Which of the following options does not have an SI base unit?

A. Luminous intensity

B. Electric current

C. Frequency ✓

D. Amount of substance

Q86 Part A HINDI - no English version saved

वह विकल्प चुनिए जो तीसरे पद से उसी प्रकार संबंधित हो जिस प्रकार दूसरा पद पहले पद से है।

लंबा: छोटा :: खुश : ?

A. भावना

B. दुखी ✓

C. प्रसन्न

D. मुस्कराहट

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Q87 Part A HINDI - no English version saved

नीचे एक प्रश्न के साथ दो तर्क, I और II, दिए गए हैं। तय कीजिए कि दिए गए तर्कों में से कौन प्रश्न के संबंध में एक मजबूत तर्क है, यदि हो।

प्रश्न: क्या टेलीविजन पर विज्ञापन प्रतिबंधित कर दिए जाने चाहिए?

तर्क I : हां, विज्ञापन अनैतिक होते हैं।
तर्क II : नहीं, विज्ञापन से होने वाली आमदनी दर्शकों की लागत कम करने में सहायता करती है।

A. केवल तर्क II मजबूत है। ✓

B. न तर्क I मजबूत है न तर्क II।

C. केवल तर्क I मजबूत है।

D. तर्क I और तर्क II दोनों मजबूत हैं।

Q88 Part A

Who was the first governor of the Reserve Bank of India?

A. HVR Iyengar

B. Sir James Braid Taylor

C. KR Puri

D. Sir Osborne A Smith ✓

Q89 Part A

A _____ is a theoretical exact plane, axis or point location that GD & T or dimensional tolerances are referenced to.

A. flange

B. section

C. frame

D. datum ✓

Q90 Part A

A 4-digit number 1xy7 is divisible by 11. What is the value of x-y?

A. - 6 ✓

B. - 8

C. - 4

D. - 2

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Q91 Part A

In angular measurements, one radian is equivalent to _____ degrees (approximately).

A. 180

B. 65.27

C. 57.27 ✓

D. 90

Q92 Part A

A motorcycle travelled 1000 m at 36 km/hr. Find the time (in seconds) taken by the motorcycle to cover this distance.

A. 400

B. 100 ✓

C. 300

D. 200

Q93 Part A

Molar specific heat capacity of a substance is _____.

A. $\left(\frac{1}{\mu}\right)\left(\frac{\Delta Q}{\Delta T}\right)$ ✓

B. $\left(\frac{1}{\mu}\right)\left(\frac{\Delta T}{\Delta Q}\right)$

C. $\mu\left(\frac{\Delta T}{\Delta Q}\right)$

D. $\mu\left(\frac{\Delta Q}{\Delta T}\right)$

Q94 Part A

An object starts from rest at x = 0 m and moves with a constant acceleration of 1.6 m/s^2 along the x-axis. During its journey from x = 12.8 m to x = 20.0 m, its average velocity will be_____.

A. 7.2 m/s ✓

B. 8.8 m/s

C. 3.6 m/s

D. 2.4 m/s

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Q95 Part A

Pipes A and B can fill a tank in 12 minutes and 16 minutes respectively. Both A and B are opened for 4 minutes and then A is closed. How much extra time will B take to fill the tank completely?

A. $\frac{21}{4}$ minutes

B. $\frac{20}{3}$ minutes ✓

C. 7 minutes

D. 6 minutes

Q96 Part A

A source of voltage V maintains a current i in a circuit. The energy supplied to the circuit by the source in time t is _____.

A. 1/Vit

B. Vi/t

C. V/it

D. Vit ✓

Q97 Part A

A number is as much greater than 50 as it is lesser than 84. What is the number?

A. 66

B. 68

C. 65

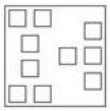
D. 67 ✓

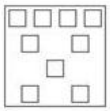
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Q98 Part A

Choose the figure that is different from the rest.

A.  ✓

B. 

C. 

D. 

Q99 Part A

The volume of a given amount of water _____ between 0° C to 4° C.

A. remains constant

B. is zero

C. decreases ✓

D. increases

Q100 Part A

A and B can do a work in 15 days, B and C can do the work in 20 days and A and C can do the work in 10 days. In how many days will they together complete the work?

A. 10.91 days

B. 10.67 days

C. 10.71 days

D. 9.23 days ✓

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Q101 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

Q102 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

Q103 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 ✓

Q104 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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Q105 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 ✓

Q106 Part B (Mechanic Radio and TV)

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

A. AB

B. B

C. A+1

D. A ✓

Q107 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

Q108 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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Q109 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 ✓

Q110 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

Q111 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 ✓

Q112 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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Q113 Part B (Mechanic Radio and TV)

_____ is the input of detector stage?

A. Audio signal

B. IF signal ✓

C. RF signal

D. carrier wave

Q114 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 ✓

Q115 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

Q116 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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Q117 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

Q118 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

Q119 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

Q120 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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Q121 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}

Q122 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

Q123 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

Q124 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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Q125 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 ✓

Q126 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 ✓

Q127 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

Q128 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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Q129 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

Q130 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 ✓

Q131 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

Q132 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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Q133 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 ✓

Q134 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

Q135 Part B (Mechanic Radio and TV)

In which part of a cell does oxidation take place?

A. Cathode

B. Anode ✓

C. Electrolyte

D. Container

Q136 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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Q137 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 ✓

Q138 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 ✓

Q139 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

Q140 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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Q141 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

Q142 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 ✓

Q143 Part B (Mechanic Radio and TV)

The binary equivalent of the octal number 456 is_____.

A. 101011110

B. 100101110 ✓

C. 101001101

D. 100111101

Q144 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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Q145 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 ✓

Q146 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

Q147 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

Q148 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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Q149 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 ✓

Q150 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 ✓

Q151 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

Q152 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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Q153 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.

Q154 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 ✓

Q155 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

Q156 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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Q157 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

Q158 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

Q159 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

Q160 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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Q161 Part B (Mechanic Radio and TV)

Which type of memory needs to be regularly refreshed?

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

Q162 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

Q163 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

Q164 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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Q165 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

Q166 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 ✓

Q167 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

Q168 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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Q169 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.

Q170 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

Q171 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

Q172 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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Q173 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

Q174 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

Q175 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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