RRB ALP Wireman 23 Jan 2019 Official Paper (Shift 3) (Previous Year Paper)

RRB Assistant Loco Pilot (ALP) • 2019 • 175 questions • 150 minutes • Answer key

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PART A

Q1. Name the scientist who discovered bacteria ?

(a) Robert Koch
(b) James Chadwick
(c) Eugen Goldstein
(d) A V Leeuwenhoek

Q2. If a body has a specific gravity of less than 1, then it will float in/on _____.

(a) air
(b) water
(c) liquids
(d) mercury

Q3. Which of the following options does not have an SI base unit?

(a) Amount of substance
(b) Frequency
(c) Luminous intensity
(d) Electric current

Q4. How many medals did India win in Rio Olympics, 2016?

(a) 3
(b) 4
(c) 2
(d) 5

Q5. 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) Venus
(b) Mercury
(c) Moon
(d) Sun

Q6. Two resistance of 2Ω and 6Ω are connected in series and this combination is connected across a 12 V battery. Find the current in the 6Ω resistor.

(a) 3.5 A
(b) 1. 5 A
(c) 0.5 A
(d) 2.5 A

Q7. Substances that are broken down by biological processes are said to be _____.

(a) reusable
(b) non-biodegradabl
(c) non-reusable
(d) biodegradable

Q8. A software program that has been developed to harm other computers is called a/an _____.

(a) server
(b) LAN
(c) malware
(d) operating system

Q9. Kuchipudi has its roots in which Indian State?

(a) Arunachal Pradesh
(b) Kerala
(c) Andhra Pradesh
(d) Himachal Pradesh

Q10. Which Indian cricketer received the Padma Bhushan in 2018?

(a) MS Dhoni
(b) Virat Kohli
(c) Sachin Tendulkar
(d) Saurav Ganguly

Q11. JPEG stands for _____.

(a) Joint Program Experts Group
(b) Joint Program Executing Group
(c) Joint Photographic Experts Group
(d) Joint Program Experimental Group.

Q12. 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) (8/15) A
(b) (2/15) A
(c) (6/15) A
(d) (4/15) A

Q13. RK Narayan is famous for his book _____.

(a) The Room on the Roof
(b) Two Livers
(c) Malgudi Days
(d) A suitable Boy

Q14. _____ protection must be worn whenever noise levels exceed the noise exposure standard.

(a) Hearing
(b) Head
(c) Eye
(d) Foot

Q15. A wire of length 1 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) 4R
(b) R/2
(c) 2R
(d) R

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Q16. Safety boots or shoes must be worn in designated areas to protect your _____ from falling objects.

(a) eye
(b) ear
(c) head
(d) feet

Q17. 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) 27R
(b) 9R
(c) R
(d) 3R

Q18. If a body is NOT homogeneous, then its density is a function of its _____.

(a) pressure
(b) acceleration
(c) position
(d) velocity

Q19. Two resistors of 10Ω and 20 Ω area 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) 10 V
(c) 5 V
(d) 15 V

Q20. Which one of these is a harvest festival?

(a) Teej
(b) Janmashtami
(c) Deepawali
(d) Onam

Q21. 86°F is equal to _____

(a) 20°C
(b) 30°C
(c) 34°C
(d) 10°C

Q22. Where is the Headquarters of UNESCO located?

(a) New York City
(b) Geneva
(c) Paris
(d) Washington DC

Q23. Name of the painter of famous painting, ‘Mahishasura’.

(a) MF Hussain
(b) Amrita Sher-Gil
(c) Raja Ravi Verma
(d) Tyeb Mehta

Q24. 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) 8 J
(b) 10 J
(c) 6 J
(d) 12 J

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Q25. The Ajanta Caves in Maharashtra feature paintings and sculptures that depict _____ tales.

(a) Arabic
(b) Islamic
(c) Buddhist
(d) Maratha

Q26. The volume of a given amount of water _____ between 0°C to 4°C.

(a) is zero
(b) decreases
(c) remains constant
(d) increases

Q27. Two resistance of 2Ω and 6Ω are connected in series and this combination is connected across a 12 V bettery. Find the power supplied by the battery.

(a) 10 W
(b) 18 W
(c) 16 W
(d) 14 W

Q28. An object weighs X units on the earth. If we take the same object to the moon, its weight there will be _____.

(a) zero
(b) less than X
(c) equal to X
(d) more than X

Q29. A body starts from rest. Its displacement is proportional to _____ when its acceleration is constant.

(a) time squared
(b) velocity
(c) work
(d) time

Q30. 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) Vit
(b) 1/Vit
(c) Vi/t
(d) V/it

Q31. Who was the first governor of the Reserve Bank of India?

(a) Sir James Braid Taylor
(b) KR Puri
(c) HVR Iyengar
(d) Sir Osborne A Smith

Q32. A car covers 400 m in 20 seconds. Find the average speed (in km/hr) of the car.

(a) 72
(b) 124
(c) 108
(d) 36

Q33. If $\sin\theta = 15/17$, then $\cot\theta = ?$

(a) 8/15
(b) 8/17
(c) 15/8
(d) 17/15

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Q34. In an examination, the highest score and the lowest score are different by 55 and the higher one was 9/4 times the lower one. Find the lowest score.

(a) 40
(b) 36
(c) 44
(d) 48

Q35. A number is as much greater than 50 as it is lesser than 84. What is the number?

(a) 65
(b) 66
(c) 68
(d) 67

Q36. If $x = \sqrt{125} \times \sqrt{30} \times \sqrt{6}$, then x is equal to:

(a) 175
(b) 125
(c) 136
(d) 150

Q37. A got Rs. 80 as his share of profit where the total profit was Rs. 240 and the ratio of profit distribution between A and B was x : 2. What is the value of x?

(a) 1
(b) 4
(c) 2
(d) 5

Q38. What is the median of 8, 5, 7, 9, 11, 6, 10?

(a) 9
(b) 8
(c) 10
(d) 7

Q39. If $5050 \times 0.5x = 25250$, then $2505 \div x^2 = ?$

(a) 0.2505
(b) 25.05
(c) 2.505
(d) 250.5

Q40. An article of marked price Rs. 12000 was sold. Had a discount of 15% been offered, a profit of 2% would have been made. What was the cost price?

(a) Rs. 10,200
(b) Rs. 10,000
(c) Rs. 11,000
(d) Rs. 10,800

Q41. A sum of Rs. 2,000 was spent in buying a pair of trousers. The sum spent was 2/5^(th) of the total money Shashi had with her. How much was the total money she had?

(a) Rs. 4,000
(b) Rs. 4, 250
(c) Rs. 4, 750
(d) Rs. 5,000

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Q42. A machine was bought for Rs. 1,500 and a repairing charge of Rs. 100 was paid afterwards. At what price should it be sold to gain a profit of 25%?

(a) Rs. 2,040
(b) Rs. 1,960
(c) Rs. 2,000
(d) Rs. 1, 920

Q43. In angular measurement, one radian is equivalent to _____ degree (approximately).

(a) 65.27
(b) 57.27
(c) 90
(d) 180

Q44. 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 completed the work?

(a) 10.67 days
(b) 10.91 days
(c) 10.71 days
(d) 9.23 days

Q45. 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) 20/3 minutes
(b) 7 minutes
(c) 21/4 minutes
(d) 6 minutes

Q46. A can do 2/5 of a work in 10 days. B can do ½ of the some work in 10 days. They worked together for 5 days and then A left. In how many days will B finish the remaining work?

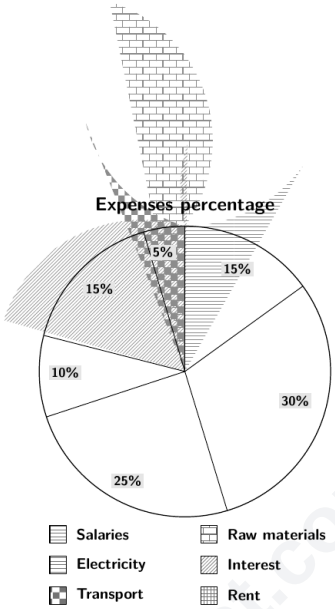
(a) 8
(b) 10
(c) 11
(d) 9

Q47. Reflection of point (-2, -6) on the Y-axis is:

(a) (2, 6)
(b) (-6, -2)
(c) (-2, 6)
(d) (2, -6)

Q48. The pie chart shows the breakup in percentage of the various expenses of a Company. Study the diagram and answer the following question.

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What is the interest expense if total expenses is Rs. 25000.

(a) Rs. 2, 500
(b) Rs. 1, 800
(c) Rs. 9, 000
(d) Rs. 5, 000

Q49. A motorcycle travelled 1000 m at 36 km/hr. Find the time (in seconds) taken by the motorcycle to cover this distance.

(a) 300
(b) 100
(c) 400
(d) 200

Q50. A 4-digit number 1xy7 is divisible by 11. What is the value of x - y?

(a) -8
(b) -2
(c) -4
(d) -6

Q51. 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) 9.6 minutes
(b) 9 minutes
(c) 9.4 minutes
(d) 8.6 minutes

Q52. What is the curved surface area of a hemisphere whose radius is 7 cm? (take π = 22/7)

(a) 616 cm^2
(b) 154 cm^2
(c) 308 cm^2
(d) 924 cm^2

Q53. 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) 895
(b) 850
(c) 880
(d) 900

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Q54. What is the distance between the points (4, 3) and (3, -2)?

(a) √26
(b) √24
(c) 6
(d) 5

Q55. sec 45° - tan 60° = ?

(a) • √3 + √2
(b) • √3 - √2
(c) (√3)/2
(d) √3 + √2

Q56. What is the least number which when doubled is perfectly divisible by 7, 12 and 15?

(a) 420
(b) 210
(c) 214
(d) 220

Q57. A sum of Rs. 10,000 amounts to Rs. 11, 449 in 2 years, when the interest is compounded annually. The interest rate percent per annum is:

(a) 6%
(b) 1%
(c) 7%
(d) 8%

Q58. 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)?

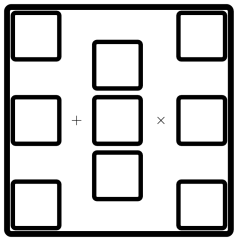
(a) 3
(b) 6
(c) 9
(d) 7.5

Q59. What is 80% of 50% of 90?

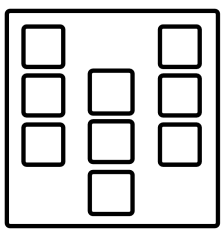
(a) 30
(b) 34
(c) 32
(d) 36

Q60. Choose the figure that is different from the rest.

(a)

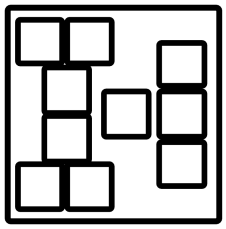


(b)

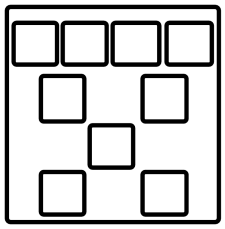


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(c)



(d)



Q61. 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) 1.56
(b) 1.54
(c) 1.68
(d) 1.62

Q62. 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 west of E
(b) F is 4 km east of E
(c) F is 18 km east of E
(d) F is 4 km west of E

Q63. Given below are some letters, that each of these letters has a corresponding number. Select the combination of numbers from the option 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) 3, 4, 5, 2, 1, 6
(c) 1, 6, 2, 4, 5, 3
(d) 2, 1, 5, 3, 4, 6

Q64. I, J, K and L are sitting in a row. L and I are sitting next to each other and I and K are the ends. Who is sitting next to J?

(a) Only K
(b) L and I
(c) K and L
(d) Only L

Q65. Select the option that is related to the third term in the same way as the second term is related to the first term.

Tall : Short ? Glad : ?

(a) Sad
(b) Happy
(c) Emotion
(d) Smile

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Q66. If, '+' represents '×', '-' represents '+', '×' represents '÷' and '÷' represents '-' then find the value of the following expression.

9 × 3 + 6 ÷ 2 = ?

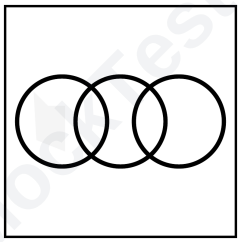
(a) 20
(b) 10
(c) 12
(d) 16

Q67. 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?

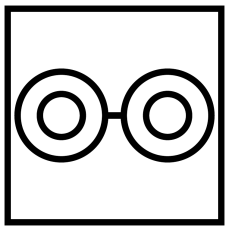
(a) I – J + F * H
(b) I + J - F * H
(c) I – J * F + H
(d) I * J - F + H

Q68. Which of the following Venn diagrams best represents the relationship between Indians, doctors and women?

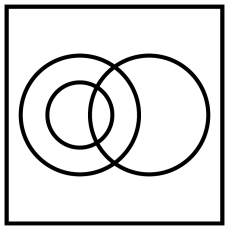
(a)



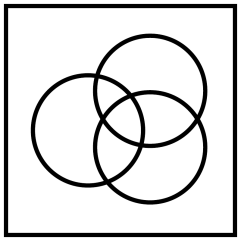
(b)



(c)



(d)



Q69. Given below are two statement, followed by two conclusion, I and II. You have to consider the statement 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.

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Conclusion I: Some rhombuses are quadrilaterals.

Conclusion II: Some rhombuses are polygons.

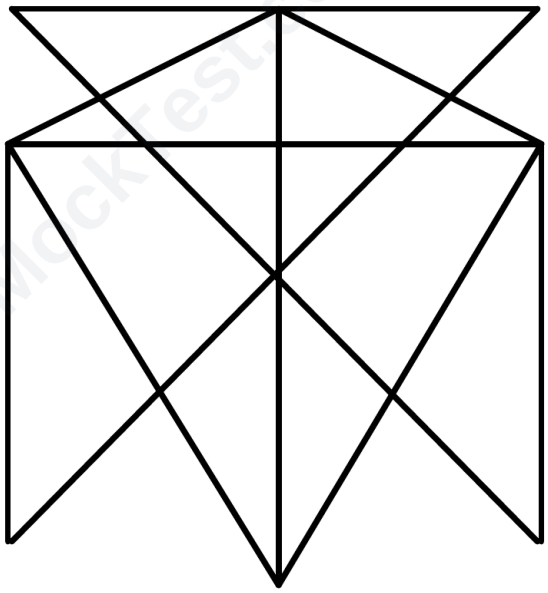
(a) Neither I nor II follows
(b) Only conclusion II follows
(c) Only conclusion I follows
(d) Both I and II follow

Q70. Which two signs should be interchanged to make the given equation correct?

9 ÷ 3 + 8 × 2 – 15 = 2

(a) × and -
(b) ÷ and -
(c) • and ×
(d) • and -

Q71. What is the minimum number of lines required to make the given image?



(a) 13
(b) 12
(c) 10
(d) 9

Q72. A series is give, with one term missing. Choose the correct alternative from the given ones that will complete the series.

OOOOOX, OOOOXX, OOOXXX, OOXXXX, ?

(a) XXXXXX
(b) OOXXXXX
(c) OOXXXX
(d) OXXXXX

Q73. 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 father of W
(d) Z is daughter of W

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Q74. Given below is a question, followed by two arguments, I and II. You have to decide which of the given arguments, if any, is a strong argument, with respect to the question.

Question: Should advertisements be banned on television?

Argument I: Yes, advertisements are immoral.

Argument II: No, advertisements bring in revenue which helps reduce cost for viewers.

(a) Only argument II is strong.
(b) Only argument I is strong.
(c) Neither I nor II is strong.
(d) Both I and II are strong.

Q75. 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) 3/7
(b) 2/13
(c) -2/13
(d) -7/3

Q76. Given below is a statement followed by two assumption numbered I and II. You have to decide which of the assumptions is/are implicit in the statement.

Statement: The human body produces Vitamin D when exposed to sunlight.

Assumption I: The human body will have Vitamin D even if it is not consumed via food.

Assumption II: A large portion of the global population suffers from Vitamin D deficiency.

(a) Both I and II are implicit
(b) Only assumption II is implicit
(c) Neither I nor II is implicit
(d) Only assumption I is implicit

Q77. 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) 8 km east
(b) 4 km west
(c) 4 km east
(d) 8 km west

Q78. Unscramble the letters in the words given below and find the odd word out.

(a) FLOW
(b) ILNO
(c) ERTIG
(d) WCO

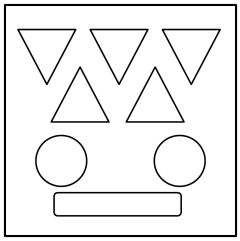
Q79. Find the odd group of letters from the given alternatives.

(a) EFG
(b) PQR
(c) VWX
(d) HJL

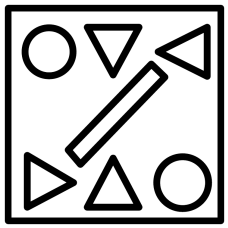
Q80. Choose the figure that is different from the rest.

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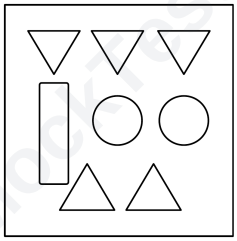
(a)



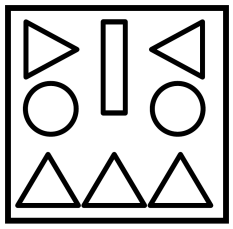
(b)



(c)



(d)

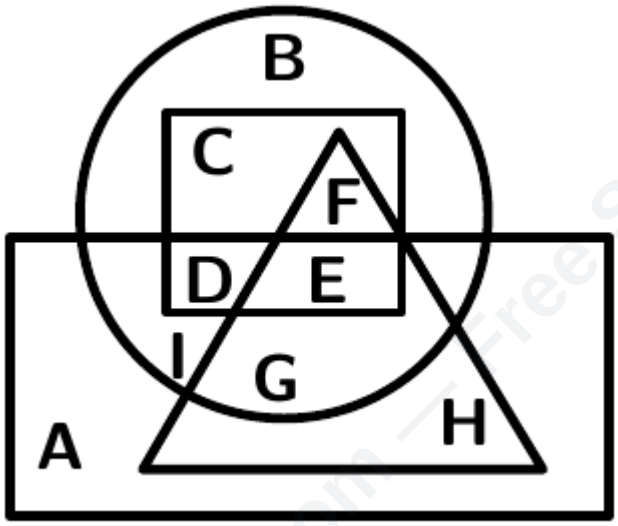


Q81. In a code language, 295 means ‘water is liquid’, 549 means ‘oil is liquid’ and 824 means ‘oil on water.’ Find the code for ‘on’.

(a) 4
(b) 2
(c) 8
(d) 5

Q82. 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?

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(a) DEIG
(b) DEF
(c) IGH
(d) GEF

Q83. The abbreviation AC in an engineering drawing stands for _____.
(a) Across Corners
(b) Aerial Cut
(c) Attached Circle
(d) Air Conditioning

Q84. Greater the value of _____ of a material, the more rapidly it will conduct heat.
(a) melting point
(b) latent heat
(c) regelation
(d) thermal conductivity

Q85. The effort applied to move a load is 15 units and the mechanical advantage is observed to be 3. Find the load.
(a) 5 units
(b) 3 units
(c) 15 units
(d) 45 units

Q86. What is the unit's digit in 3^(66)× 6^(41) × 7^(53)
(a) 8
(b) 3
(c) 6
(d) 7

Q87. If the width of a standard engineering drawing sheet is 841 mm, then its length would be _____ mm.
(a) 1189
(b) 1250
(c) 1000
(d) 1216

Q88. 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) 6000 J
(b) 27 J

(c) 2700 J
(d) 270 J

Q89. 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 × Ld
(b) L/Ld
(c) Ld/L
(d) 1/(L × Ld)

Q90. A brass rod (thermal conductivity 109 J/s m K) has an area of cross section 0.04 m² 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) 3.42 kJ/s
(b) 2.32 kJ/s
(c) 4.36 kJ/s
(d) 5.80 kJ/s

Q91. The effort in a class 1 lever is in _____ direction(s).
(a) three
(b) multiple
(c) two
(d) one

Q92. The velocity ratio of a simple machine is the ratio of distance traveled by the _____ to the distance traveled by the _____ in the machine.
(a) load; load
(b) effort; load
(c) load; effort
(d) effort; effort

Q93. 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) development
(b) dimensioning
(c) projection
(d) animation

Q94. A _____ is a theoretical exact plane, axis or point location that GD & T or dimensional tolerances are referenced to.
(a) flange
(b) frame
(c) section
(d) datum

Q95. Molar specific heat capacity of a substance is _____.
(a) (1/μ)((Δ Q)/(Δ T))
(b) μ ((Δ Q)/(Δ T))
(c) (1/μ)((Δ T)/(Δ Q))
(d) μ ((Δ T)/(Δ Q))

Q96. In engineering drawing, the letters LH signifies _____.
(a) Level Hide
(b) Left Hand
(c) Low Heat
(d) Limit of Height

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Q97. Identify the material having high coefficient of volume expansion.

(a) Brass
(b) Alcohol
(c) Glass
(d) Water

Q98. An object starts from rest at x = 0 m and moves with a constant acceleration of 1.6 m/s² 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) 3.6 m/s
(c) 8.8 m/s
(d) 2.4 m/s

Q99. You are given a question and two statements. Identify which of the statements is/are necessary/sufficient to answer the question.

Question: What was the discount percent offered on the soap by the store?

Statements:

I) The store is giving 1 soap free on purchase of three.

II) Rs. 10 discount is offered on purchase of soap worth 36.

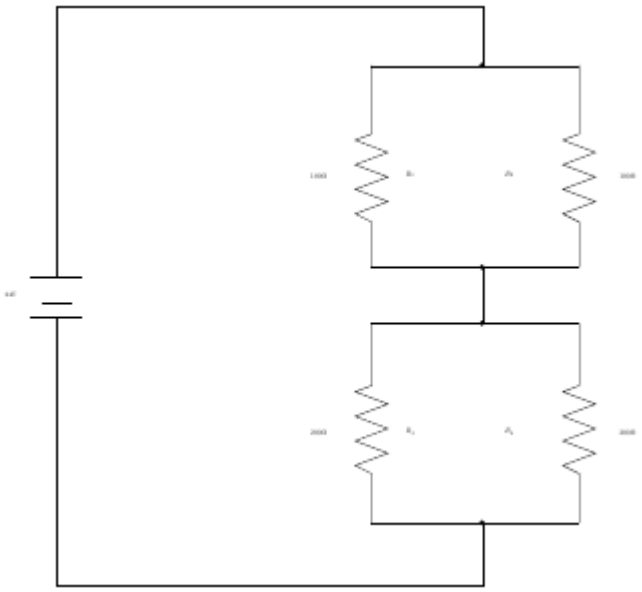
(a) II alone is sufficient while I alone is not sufficient
(b) I alone is sufficient while II alone is not sufficient
(c) Neither I nor II is sufficient
(d) Either I or II is sufficient

Q100. Identify the material having low coefficient of volume expansion

(a) Iron
(b) Mercury
(c) Brass
(d) Aluminium

PART B

Q101. What is the amount of current is flowing through the resistor R1?



(a) 0.8 A
(b) 80 mA
(c) 160 mA
(d) 10 mA

Q102. In ideal case, what should be the charging current for a 100 Ah battery?

(a) 10 A
(b) 20 A
(c) 8 A
(d) 5 A

Q103. Average resistance of human body is approximately:

(a) 500 Ω
(b) 2000 Ω
(c) 1000 Ω
(d) 3000 Ω

Q104. Which of the following is a Pentavalent element used for doping of semi-conductors?

(a) Aluminum
(b) Antimony
(c) Indium
(d) Boron

Q105. Why is the depletion region in Zener diodes narrower than a regular diode?

(a) Because the doping of P & N regions in Zener diode is lighter than in a regular diode.
(b) Because of the Heavy doping of P & N regions in Zener diode than in regular diode.
(c) Because Zener diodes are made of different semiconductor.
(d) Because P region is heavily doped while N region is lightly doped.

Q106. V-I curve of an ohmic component will be a/an:

(a) elliptical
(b) parabolic
(c) straight line
(d) non-linear

Q107. If a reverse biased Zener diode is operating in breakdown region, then the voltage across Zener diode:

(a) will remain same irrespective of the current through the circuit
(b) is directly proportional to the source voltage
(c) is directly proportional to the current
(d) is inversely proportional to the current

Q108. A 6 pole 3 φ induction motor is operating at a speed of 950 rpm on 550 V, 50 Hz mains. What is the slip?

(a) 5%
(b) 2%
(c) 4%
(d) Can't be determined

Q109. What is the color of neutral in three core flexible cables?

(a) Brown
(b) Black
(c) Blue
(d) Red

Q110. Which electrolyte is used in Lead-Acid cells?

(a) Concentrated H2SO4
(b) Diluted H2SO4
(c) NaOH
(d) Any Alkali

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Q111. Which of the following is the ideal value of earthing resistance used for large power stations?

(a) 1 Ω
(b) 0.5 Ω
(c) 5 Ω
(d) 10 Ω

Q112. Which of the following insulating materials has the lowest dielectric losses?

(a) EPR
(b) PE (Polyethylene)
(c) XLPE
(d) PVC

Q113. Which among the following DC generators produces constant output voltage at all loads?

(a) Shunt generator
(b) Short shunt compound generator
(c) Level compound generator
(d) Series generator

Q114. Which of the following components is used for collecting current from the commutator and supply it to the external load?

(a) Ammature
(b) Magnet
(c) Yoke
(d) Brushes

Q115. Which of the following has a NEGATIVE temperature coefficient of resistance?

(a) Graphite
(b) Aluminum
(c) Iron
(d) Copper

Q116. Which of the following wiring is commonly used in commercial and industrial wiring?

(a) Conduit Wiring
(b) Batten Wiring
(c) Cleat Wiring
(d) Casing and Capping Wiring

Q117. Increase in the plate area of a cell will:

(a) have the same impact as increasing the gap between the plates
(b) decrease the internal resistance.
(c) not impact internal resistance
(d) increase the internal resistance

Q118. First generation computers had which of the following?

(a) Magnetic tapes
(b) Transistors
(c) ICs
(d) Vaccum tubes & Magnetic drum

Q119. Which of the following is NOT an alternate term for Hopkinson's test?

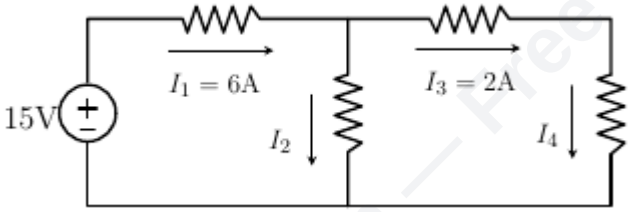
(a) Heat run test
(b) Back to back test
(c) Regenerative test
(d) Brake test

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Q120. How many P-N junction diode(s) is/are required for a full wave rectifier circuit? (Center-Tap)

(a) 2
(b) 1
(c) 4
(d) 6

Q121. What should be the value of I2 flowing in the following circuit?



(a) 6 A
(b) 2 A
(c) 4 A
(d) 8 A

Q122. In which of the following regions of a cable, voltage stress is maximum?

(a) Insulator
(b) Sheath
(c) Surface of the conductor
(d) Core of the conductor

Q123. The peak output voltage of a transformer will NOT depend on:

(a) supply voltage
(b) number of turns in the secondary coil
(c) number of turns in the primary coil
(d) frequency of the supply voltage

Q124. Two resistors of 5 Ω each are connected in series and being powered by a 12 V battery. What is the current flowing through the circuit?

(a) 2.4 A
(b) 1 A
(c) 2 A
(d) 1.2 A

Q125. Which of the following is used in transformer protection system?

(a) Buchholz Relay
(b) Pressure Switches
(c) MHO relay
(d) Merz price protection

Q126. Three bulbs of 40 W, 60 W & 100 W are connected in series across 220 V AC source. Which bulb will glow brighter?

(a) 100 W bulb
(b) 60 W bulb
(c) 40 W bulb
(d) All bulbs will be equally bright

Q127. How is the condition of an earth electrode verified?

(a) By Measuring power
(b) By measuring resistance
(c) By Measuring Voltage

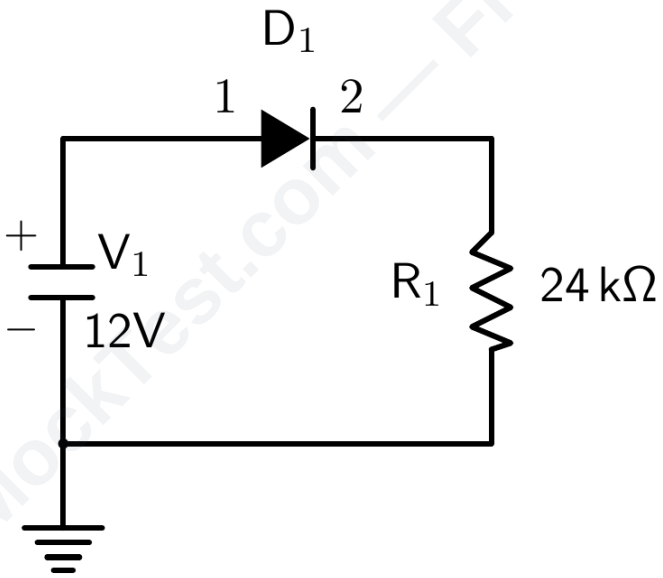
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(d) By measuring current

Q128. Parallel grouping of cells is done to:

(a) increase the current capacity
(b) increase the internal resistance
(c) decrease the output voltage
(d) increase the output voltage

Q129.



What current is flowing through the diode?

(a) 0.5 mA
(b) 5 mA
(c) 2 mA
(d) 0.5 A

Q130. If six 12 V cells are connected in parallel, then the output voltage will be:

(a) 6 V
(b) 72 V
(c) 12 V
(d) 2 V

Q131. Which of the following is not a part of the earthing system?v

(a) Earthing lead
(b) Earth Continuity Conductor
(c) Earth electrode
(d) Fuse

Q132. How many 200 linear lamps are required to obtain a minimum illuminance of 50 lux in a 5 m and 8 m rectangular hall?

(a) 10
(b) 4
(c) 40
(d) 160

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Q133. Lathe Machines commonly use _____ motor.

(a) DC shunt
(b) slip ring induction
(c) cumulative compound
(d) DC series

Q134. What impact will the moisture content have on the earth soil resistance?

(a) No Impact
(b) Soil resistance will decrease
(c) Soil resistance will Increase
(d) Depends on the type of soil

Q135. The value of electric field E at a point in Electric field of a point charge can be calculated using:

(a) Kirchhoff's Law
(b) Coulomb's Law
(c) Lenz's Law
(d) Ohm's Law

Q136. Direct Online Starters are generally used with motors of:

(a) any Capacity
(b) less than 5 hp
(c) more than 10 hp but less than 50 hp
(d) more than 10 hp

Q137. Read the statement given below and answer the question.

Statement: The mass of the substance (m) deposited or liberated at any electrode is directly proportional to the quantity of electricity or charge (Q) passed.

Question: The above statement is associated with which of the following laws?

(a) Ohm's Law
(b) Faraday's Law Of Electrolysis
(c) Kirchhoff's Current Law
(d) Faraday's Law Of Electromagnetic Induction

Q138. Which of the following is not true with respect to the ammeter & voltmeter?

(a) Ammeter has high resistance and voltmeter has low resistance
(b) Ammeter is connected in series and the voltmeter is connected in parallel
(c) Connecting the ammeter to the circuit requires disassembling the circuit.
(d) A voltmeter can be connected without disconnecting the circuit

Q139. Which of the following devices is used for measuring the speed of DC machines?

(a) Tachometer
(b) LCR Meter
(c) Rheostat
(d) Ammeter

Q140. Which of the following conditions is not necessary for the parallel operation of alternators?

(a) Phase sequence and Busy bar voltages of the incoming machine should be similar
(b) The terminal voltage of the running machine should be double that of the incoming machine
(c) The frequency of the two terminal voltages should be almost equal
(d) The phase angle of the two systems should be equal

Q141. Which of the following is true for specific resistance of soil?

(a) Varies from soil to soil
(b) Is constant and doesn't depend on the soil
(c) Depends on the circuit connected

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(d) Depends on supply voltage

Q142. A 220 V dc motor having an armature resistance of 0.8 ohm draws an armature current of 25 A. What will be the value of back emf induced?

(a) 240 V
(b) 220 V
(c) 200 V
(d) 208 V

Q143. Which of the following is true w.r.t. the primary coil of a transformer in OC & SC tests?

(a) Low voltage side for O.C. test & high voltage side for S.C. test
(b) Low Voltage side for both O.C. & S.C. tests
(c) High voltage side for O.C. test & low voltage side for S.C. test
(d) High Voltage side for both O.C. & S.C. tests

Q144. Intensity of light is measured in:

(a) Gauss
(b) Weber
(c) Candela
(d) Lumen

Q145. How many wattmeter elements are needed at minimum to measure the power of a 3-phase circuit?

(a) 2
(b) 1
(c) 4
(d) 3

Q146. Which of the following factors determines the thickness of the insulation layer in cables?

(a) Current Capacity
(b) Power rating
(c) Operating Voltage
(d) Permeability

Q147. The shaft torque of a DC motor is:

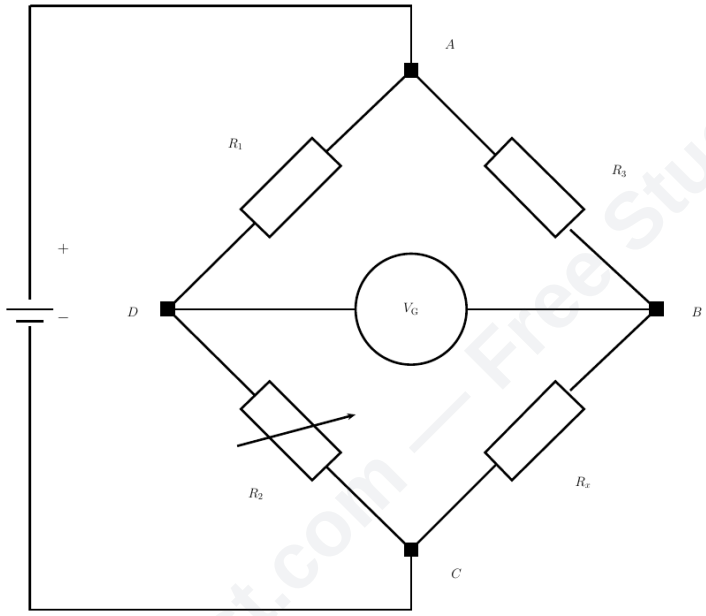
(a) more than its armature torque
(b) same as its armature torque
(c) less than its armature torque
(d) either less or more than the armature torque depending on the size and make of the motor

Q148. Watt-hour efficiency of a cell _____ Ampere-hour efficiency.

(a) is always less than
(b) is always more than
(c) is always equal to
(d) can be less or more than

Q149. Which of the expressions is true for the balanced condition of the following wheatstone bridge?

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(a) RX = (R3 + R1)/R2
(b) RX/R3 = R2/R1
(c) RX = R2/(R3/R1)
(d) RX/R1 = R2/R3

Q150. Which of the following is a characteristic of an earth electrode?
(a) Low conductance
(b) Low resistance
(c) Infinite resistance
(d) High resistance

Q151. Which of the following principles is KVL based on?
(a) conservation of momentum
(b) conservation of energy
(c) conservation of mass
(d) conservation of charge

Q152. Which of the following wiring systems has the longest life span?
(a) Conduit Wiring
(b) Batten Wiring
(c) Cleat Wiring
(d) Casing and Capping Wiring

Q153. IE Rule 67 stands for:
(a) test for resistance of insulation
(b) joints
(c) connection with earth
(d) condensers

Q154. Which of the following is a trivalent doping element?
(a) Arsenic
(b) Antimony
(c) Boron
(d) Phosphorous

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Q155. If a 3-phase 100 Hz induction motor has a slip of 4%, then what will be the frequency of motor induced emf?

(a) 50 Hz
(b) 8 Hz
(c) 100 Hz
(d) 4 Hz

Q156. Which of the following motors is typically found on low horsepower applications?

(a) Permanent magnet DC motors
(b) Shunt DC motors
(c) Compound DC motors
(d) Series DC motors

Q157. Avalanche breakdown is caused due to:

(a) emission of electrons
(b) Impact of ionization
(c) strong electric field
(d) high temperature

Q158. If a silicon diode is operating in forward bias in a circuit with 12 V supply and 240 Ω resistor, then what will be the voltage drop across the diode?

(a) 1.5 V
(b) 6 V
(c) 12 V
(d) 0.7 V

Q159. Controlling Torque in megger is provided by:

(a) gravity
(b) coil
(c) eddy current
(d) battery

Q160. High tonnage kettles are generally used in circulation lines with volumes up to _____?

(a) 22 kV
(b) 11 kV
(c) 33 kV
(d) 50 kV

Q161. Which of the following is required for grouping 2 cells in parallel?

(a) They should have same internal resistance.
(b) They should be Fully charged.
(c) They should have the same ampere-hour rating.
(d) They should have same emf.

Q162. Which of the following IE rules stands for "Danger Notices"?

(a) IE Rule 45
(b) IE Rule 43
(c) IE Rule 35
(d) IE Rule 42

Q163. KCL is based on the principle of:

(a) conservation of mass
(b) conservation of momentum
(c) conservation of charge
(d) conservation of energy

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Q164. Which of the following core types is suitable for high frequency transformers used in radio transmission?

(a) Copper core
(b) Carbonyl Iron core
(c) Air core
(d) Soft Iron core

Q165. Wheatstone bridge can be used to measure _____.

(a) power
(b) resistance
(c) Voltage
(d) current

Q166. A wire of length 'L' with resistance 10 Ω is drawn further so that it's length becomes 2 L. What will be the resistance of the new wire?

(a) 5 Ω
(b) 10 Ω
(c) 40 Ω
(d) 20 Ω

Q167. The current carrying capacity of cables is:

(a) relatively more in AC
(b) sometimes more in AC and sometimes more in DC
(c) same in AC as well as DC
(d) relatively more in DC

Q168. What will be the power dissipation across a silicon diode carrying a current of 50 mA?

(a) 25 mW
(b) 50 W
(c) 35 mW
(d) 100 mW

Q169. A half wave rectifier has a 200 V rms. source and the step-down transformer has a turns ratio of 4 : 1. What will be the peak voltage across the load ignoring the drop across the diode?

(a) 70.7 V
(b) 40 V
(c) 100 V
(d) 50 V

Q170. Which of the following is an application of Zener diode?

(a) Rectifier
(b) Voltage Regulator
(c) Amplifier
(d) Oscillator

Q171. Which of the following cables are commonly used for LAN access in schools and offices?

(a) UTP
(b) TRS
(c) CAT 5
(d) PVC

Q172. Which of the following is NOT true of parallel operation of alternators?

(a) Increase in reliability
(b) Increase in losses
(c) Increase in efficiency
(d) Proper load sharing

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Q173. Which of the following components is present in a DC machine but NOT in AC machine?

(a) Winding
(b) Commutator
(c) Stator
(d) Shaft

Q174. Which of the following statements is true?

(a) Internal resistance is 0 for an ideal current source.
(b) Internal resistance is infinite for an ideal voltage source.
(c) Internal resistance is 0 for an ideal voltage source and infinite for an ideal current source.
(d) Internal resistance should be 0 for ideal current as well as ideal voltage source.

Q175. Which of the following components protects a cable against mechanical injury?

(a) Sheath
(b) Armouring
(c) Bedding
(d) Insulation

ANSWER KEY

1 a	2 a	3 a	4 a	5 a	6 a	7 a	8 a	9 a	10 a
11 a	12 a	13 a	14 a	15 a	16 a	17 a	18 a	19 a	20 a
21 a	22 a	23 a	24 a	25 a	26 a	27 a	28 a	29 a	30 a
31 a	32 a	33 a	34 a	35 a	36 a	37 a	38 a	39 a	40 a
41 a	42 a	43 a	44 a	45 a	46 a	47 a	48 a	49 a	50 a
51 a	52 a	53 a	54 a	55 a	56 a	57 a	58 a	59 a	60 a
61 a	62 a	63 a	64 a	65 a	66 a	67 a	68 a	69 a	70 a
71 a	72 a	73 a	74 a	75 a	76 a	77 a	78 a	79 a	80 a
81 a	82 a	83 a	84 a	85 a	86 a	87 a	88 a	89 a	90 a
91 a	92 a	93 a	94 a	95 a	96 a	97 a	98 a	99 a	100 a
101 a	102 a	103 a	104 a	105 a	106 a	107 a	108 a	109 a	110 a
111 a	112 a	113 a	114 a	115 a	116 a	117 a	118 a	119 a	120 a
121 a	122 a	123 a	124 a	125 a	126 a	127 a	128 a	129 a	130 a
131 a	132 a	133 a	134 a	135 a	136 a	137 a	138 a	139 a	140 a
141 a	142 a	143 a	144 a	145 a	146 a	147 a	148 a	149 a	150 a
151 a	152 a	153 a	154 a	155 a	156 a	157 a	158 a	159 a	160 a
161 a	162 a	163 a	164 a	165 a	166 a	167 a	168 a	169 a	170 a
171 a	172 a	173 a	174 a	175 a					

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