RRB ALP Electronics Mechanic 21 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. Two resistors, one of 10 Ω and the other of 15 Ω, are connected in parallel. This combination is connected in series with a 24 Ω resistor and a 12 V battery. The current in the 15 Ω resistor is:

(a) 0.40 A
(b) 0.24 A
(c) 0.12 A
(d) 0.16 A

Q2. Which type of pencil has the hardest graphite lead?

(a) 3H
(b) 2H
(c) 9H
(d) HB

Q3. The weight of an object on the Earth is 150 N. Its weight on moon will be:

(a) 75 N
(b) 50 N
(c) 150 N
(d) 25 N

Q4. A ‘compass’ is used to draw:

(a) Circle
(b) Rectangle
(c) Triangle
(d) Straight line

Q5. An object is accelerating at 5 m/s² from its rest position. The velocity of this object after 5 s is:

(a) 15 m/s
(b) 20 m/s
(c) 5 m/s
(d) 25 m/s

Q6. The work to be done to increase the speed of a 0.5 kg ball from 4 m/s to 8 m/s is:

(a) 8 J
(b) 12 J
(c) 16 J
(d) 4 J

Q7. Which of these is NOT a type of string musical instrument?

(a) Bass
(b) Violin
(c) Tuba
(d) Cello

Q8. A/An _____ is the software that manages all of a computer's processes and allows programs and applications to run.

(a) spam
(b) malware
(c) modem
(d) operating system

Q9. A cylindrical wire of length L and radius r has a resistance R. The resistance of another wire of the same material but of half its length and twice its radius is given by:

(a) R
(b) R/2
(c) R/4
(d) R/8

Q10. Two resistors, each of 20 ohms, are connected in parallel and this combination is connected across a 40 V supply voltage.

Find the resistance in the circuit.

(a) 40 ohm
(b) 10 ohm
(c) 25 ohm
(d) 20 ohm

Q11. Our electricity bills carry the energy consumption, expressed in units of _____.

(a) KVA
(b) kW
(c) kWh
(d) KJ

Q12. A component that adds to a software program's functionality is called as _____

(a) Plug-in
(b) Processor
(c) Modem
(d) Server

Q13. A block of wood floats in water with 30% of its volume above water (density 10^3 kg/m^3). The density of wood (in kg/m^3) is:

(a) 6×10^3
(b) 5×10^2
(c) 7×10^2
(d) 3×10^2

Q14. Bio-gas is an excellent fuel as it contains up to _____% methane.

(a) 85
(b) 70
(c) 50
(d) 80

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Q15. Who was appointed as the Chief Justice of India on 03.10.2018?

(a) Mr. N.V. Ramana
(b) Mr. Ranjan Gogoi
(c) Mr. Kurian Joseph
(d) Mr. Arjan Kumar Sikri

Q16. The thanksgiving festival of Pongal is primarily celebrated in which state of India?

(a) Tamilnadu
(b) Rajasthan
(c) Maharashtra
(d) Uttar Pradesh

Q17. What is the power dissipated in a 5-ohm resistor carrying 2 A current?

(a) 10 W
(b) 0.6 W
(c) 2.5 W
(d) 20 W

Q18. Which of these is NOT a novel written by Premchand?

(a) Godaan
(b) Gaban
(c) Nirmala
(d) Deepshikha

Q19. The idea of a Constituent Assembly was given by:

(a) Dr. Rajendra Prasad
(b) Maulana Abul Kalam Azad
(c) M.N Roy
(d) B.R. Ambedkar

Q20. A ball of 200 g is thrown vertically upward with a speed of 20 m/s. The momentum of the ball at the highest point of its path is (take g = 10 m/s^2):

(a) 200 kgm/s
(b) 100 kgm/s
(c) 40 kgm/s
(d) 0

Q21. Increasing the pressure on an object ____ the volume of the object and therefore ____ its density.

(a) increases, increases
(b) increases, decreases
(c) decreases, increases
(d) decreases, decreases

Q22. The construction of the “Sanchi Stupa” was commissioned by which Mauryan Emperor?

(a) Chandragupta Maurya
(b) Bindusara
(c) Ashoka
(d) Kautilya

Q23. If we double the length of a copper wire keeping the cross-sectional area constant, its resistance increases by _____ times.

(a) Four
(b) One
(c) Three
(d) Two

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Q24. Identify the insulator from the below having high resistivity.

(a) Glass
(b) Diamond
(c) Hard rubber
(d) Dry paper

Q25. Which of the following organisations prepares a Red List of Threatened Species?

(a) RPPO
(b) OIE
(c) WWF
(d) IUCN

Q26. A source of voltage V maintains a current I in a circuit. The power (P) input to the circuit by the source is given by:

(a) P = V I
(b) P = V/I
(c) P = I/V
(d) P = 1/(V I)

Q27. The Celsius temperature (t_C) and the Fahrenheit temperature (t_F) are related as:

(a) t_F = (5/9) t_C + 32
(b) t_F = (9/5) t_C
(c) t_F = (9/5) t_C + 32
(d) t_F = (5/9) t_C

Q28. Who invented the World Wide Web?

(a) Tim Berner-Lee
(b) Robert E. Kahn
(c) Vint Cerf
(d) Antonio Meucci

Q29. A boy weighing 50 kg runs up a staircase of 40 steps, each of 16 height cm, in 10 s. Calculate his power. (Take g = 10 m/s^2)

(a) 480 W
(b) 320 W
(c) 120 W
(d) 80 W

Q30. Laho dance belongs to the state of _____ in India.

(a) Meghalaya
(b) Rajasthan
(c) Orissa
(d) Andhra Pradesh

Q31. Which country did India beat to win the Under19 Cricket Asia Cup 2018?

(a) Sri Lanka
(b) Afghanistan
(c) Pakistan
(d) Bangladesh

Q32. Which of the following quantities does not have dimensions?

(a) Frequency
(b) Volume
(c) Relative permeability
(d) Force

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Q33. The sum of the present ages of a father and a son is 45 year. 5 year ago, the ratio of their ages was 6 : 1. Find the current age of the father.

(a) 40 year
(b) 30 year
(c) 25 year
(d) 35 year

Q34. Find the odd word from the given alternatives

(a) Carom board
(b) Wheel
(c) Coin
(d) Hula hoop

Q35. Find the odd set of letter from the given alternatives.

(a) JLN
(b) MNO
(c) RTV
(d) CEG

Q36. In the question, two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if they seem to be at variance with commonly known facts. You have to decide which of the given conclusions, if any, follow(s) from the given statements.

Statement 1: All stones are cyclones

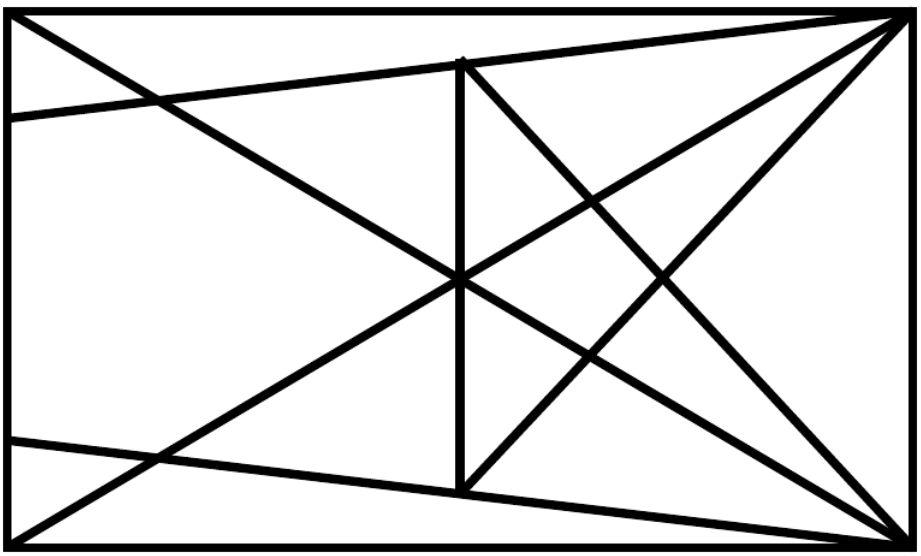
Statement 2: All cyclones are tornadoes

Conclusion I: Some tornadoes are stones

Conclusion II: Some cyclones are stones

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

Q37. What is the minimum number of lines required to make the given image?



(a) 11
(b) 10
(c) 9
(d) 12

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Q38. A statement/group of statements is given followed by some conclusion. Choose the conclusion that logically follows from the given statements.

Statement: All hardworking worker in the factory have been promoted in the last five year:

(a) Some worker who were promoted in the last five year are hardworking
(b) There are no worker in the factory who are not hardworking
(c) Hardworking is the only criteria for promotion
(d) After promotion, some worker stopped working hard

Q39. Two cows G and H are grazing in a field. They start from the same point. G moves 1.5 km South, then turns East and moves 2.5 km, then turns to its right and moves 3.5 km. Meanwhile H has moved 2.5 km East. Where is H with respect to G.

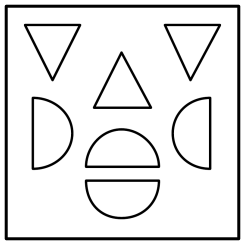
(a) H is 2 km South of G
(b) H is 5 km North of G
(c) H is 5 km South of G
(d) H is 2 km North of G

Q40. A jogger jogs 1 km East, then turn North and jogs 4 km, then turns West and jogs 6 km, then turns to his left and jogs 4 km. Where is he now with reference to his starting position?

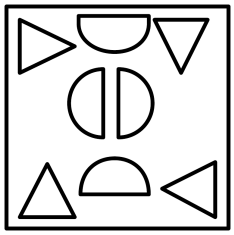
(a) 5 km West
(b) 7 km West
(c) 7 km East
(d) 5 km East

Q41. Choose the figure that is different from the rest.

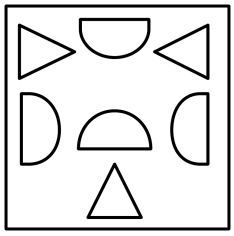
(a)



(b)

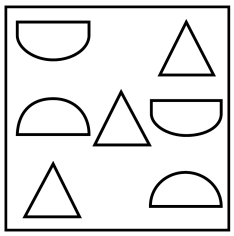


(c)



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(d)



Q42. If G + H means G is daughter of H; G - H means G is father-in-law of H; and G * H means G is husband of H; then which of the following shows that O is the sister L?

(a) O * N - M + L
(b) O - N * M + L
(c) O + M - N * L
(d) O - N + M * L

Q43. A series is given, with one number missing. Choose the correct alternative from the given ones that will complete the series.

7.4, 8.7, 10.0, 11.3, ?, 13.9

(a) 11.9
(b) 12.3
(c) 11.7
(d) 12.6

Q44. Which two signs should be interchanged to correct the given equation?

15 ÷ 3 + 2 × 10 - 6 = 14

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

Q45. Select the word that is related to the third word in the same way as the second word is related to the first word.

Walnut : shell : : Banana : ?

(a) Peel
(b) Green
(c) Fruit
(d) Ripe

Q46. A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

TTTTTTO, TTTTTOT, TTTTOTT, TTTOTTT

(a) TTTOTTTT
(b) TTTOTTTO
(c) TTOTTT
(d) TTOTTTT

Q47. What was the day of the week on January 26, 1989?

(a) Tuesday
(b) Thursday
(c) Sunday
(d) Monday

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Q48. Read the question below followed by two statements. Study them and decide which statement(s) is/are sufficient to answer the question.

Question: What was the revenue of the zoo on a certain day?

Statements:

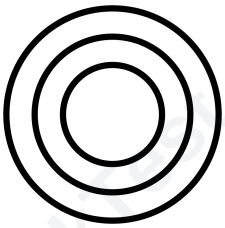
I) 120 person visited the zoo on that certain day.

II) A discount of 25% on ticket price was offered on that certain day.

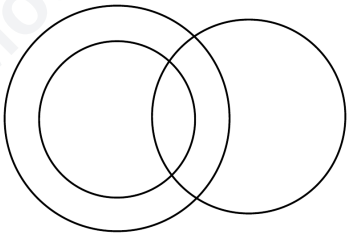
(a) Neither statement I nor II is sufficient
(b) Statement I alone is sufficient while II alone is not sufficient
(c) Statement II alone is sufficient while I alone is not sufficient
(d) Either statement I or II is sufficient

Q49. Which of the following Venn diagrams best represents the relationship between women, mother, and doctor?

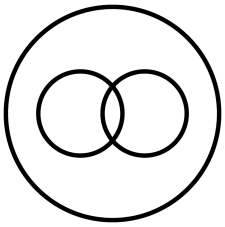
(a)



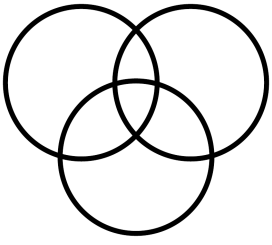
(b)



(c)



(d)



Q50. In the question, two statements are given, followed by three conclusions, I, II and III. 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: All bamboo are tall.

Statement 2: All tall are grass.

Conclusion I: Some grass are bamboo.

Conclusion II: Some tall are bamboo.

Conclusion III: Some grass are tall.

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(a) All conclusions I, II and III follow
(b) Only conclusions I and III follow
(c) Only conclusions II and III follow
(d) Only conclusions I and II follow

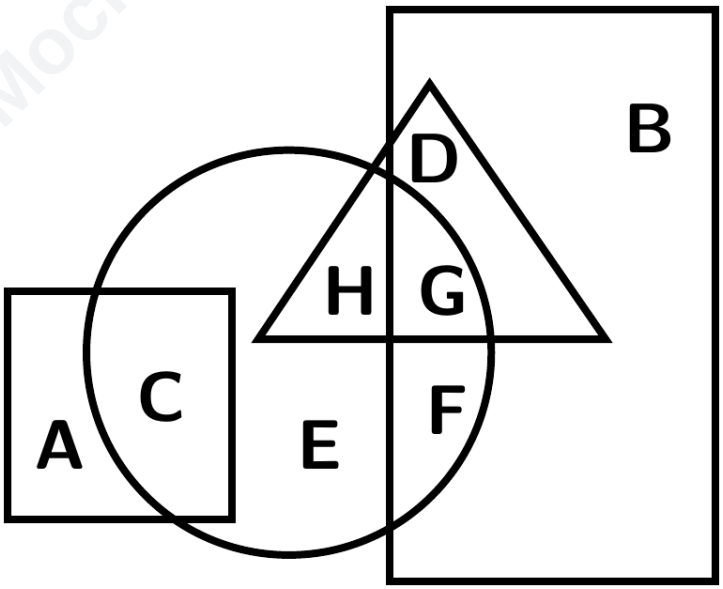
Q51. If C% D means C is the wife of D; C & D means C is the father of D; and If C $ D means C is the daughter of D, then what would X $ Y % W & Z mean if W has only one daughter?

(a) X is the son of Z
(b) Z is the sister of X
(c) Z is the sister of the mother of X
(d) X is the sister of Z

Q52. In a certain code language, 512 means 'steel makes tower', 175 means 'brick makes tower', and 327 means 'brick and steel'. Find the code for 'and'.

(a) 3
(b) 1
(c) 2
(d) 7

Q53. In the following figure, square represents Asians, triangle represents writers, circle represents fathers and rectangle represents actors. Which set of letters represents actors who are writers?



(a) GD
(b) GF
(c) CEG
(d) HGF

Q54. M, N, O and P are sitting around a round table? M does not want to sit next to P. N is to the right of P. Which statement of the below is false?

(a) O is to the right of P
(b) M is facing P
(c) M is to the right of N
(d) O is facing N

Q55. Given below is a statement followed by two assumptions numbered I and II. You have to decide which of the assumptions is/are implicit in the statement.

Statement: College students should work during summer holidays to improve their chances of getting a job.

Assumption I: Not all college students want a job.

Assumption II: There are enough summer jobs for most college students.

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

Q56. In a certain code language, '+' represents '×', '-' represents '+', '×' represents '÷' and '÷' represents '-', calculate the answer of the following equation.

8 + 3 × 4 - 2 = ?

(a) 12
(b) 6
(c) 10
(d) 8

Q57. In a certain code language, if STUDIO is coded as QRSBGM, then how will RAW be coded in that language?

(a) PYU
(b) WXR
(c) UKN
(d) TGB

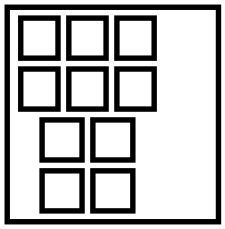
Q58. Select the number that is related to the third number in the same way as the second number is related to the first number

2/5 : 0.4 : : 1/200 : ?

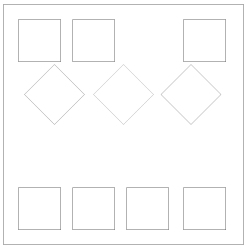
(a) 0.005
(b) 0.05
(c) 0.2
(d) 0.002

Q59. Choose the figure that is different from the rest.

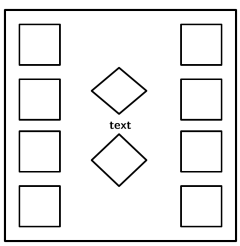
(a)



(b)

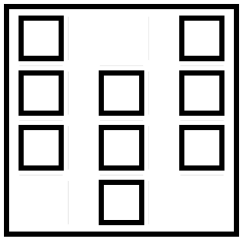


(c)



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(d)



Q60. The length and breadth of a rectangle is 6 cms and 8 cms respectively. Then what will be the area of a square whose side is equal to the length of the diagonal of this rectangle.

(a) 100 cm^2
(b) 92 cm^2
(c) 96 cm^2
(d) 196 cm^2

Q61. The resulting value of 0.5 ÷ 12.5 + 0.25 × 0.05 – 0.0125 is:

(a) 0.04
(b) 0.5
(c) 0.4
(d) 0.05

Q62. 10% of 1000% of 100 = ?

(a) 110
(b) 100
(c) 102
(d) 105

Q63. What is the square root of 0.000225?

(a) 0.0125
(b) 0.0015
(c) 0.005
(d) 0.015

Q64. An article was marked for Rs. 1000. Had a discount of 16% was offered, a profit of 5% would have been made. What is the cost price of the article?

(a) Rs. 750
(b) Rs. 800
(c) Rs. 880
(d) Rs. 840

Q65. Two trains start moving towards each other when they are 2000 meter apart. First train travels at the speed of 20 m/s and the other one at 30 m/s. After how many seconds do they meet?

(a) 45
(b) 40
(c) 35
(d) 50

Q66. What is the digit that will come at the unit's place in the result of (423)^(423) × (1237)^(28)?

(a) 9
(b) 7
(c) 1
(d) 3

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Q67. Pipes P and Q fill a cistern in 12 minutes when operated together, Q and R fill it in 20 minutes when operated together and P and R fill it in 15 minutes when operated together. In how many minutes can all 3 pipes fill the cistern if operated together?

(a) 10 minutes
(b) 2 minutes
(c) 4 minutes
(d) 3 minutes

Q68. Pipes A and pipe B can fill a tank at rate of 30 m^3/hr and 40 m^3/hr respectively. Together they fill the tank in 4 hours. Find the volume of the tank.

(a) 180 m^3
(b) 280 m^3
(c) 360 m^3
(d) 200 m^3

Q69. If a person goes from his house to office walking at 80% of his usual speed, then he is late by 18 minutes to reach the office. What is the usual time taken by him to cover that same distance with his usual speed?

(a) 78 minutes
(b) 72 minutes
(c) 75 minutes
(d) 70 minutes

Q70. X jogs a total of 7.5 km in a day. He jogged 25/6 km in the morning. How much did he jog in the Evening?

(a) 5/3 Km
(b) 8/3 Km
(c) 11/3 Km
(d) 10/3 Km

Q71. What will be the distance covered by a bus moving with a speed of 72 km/h in 5 seconds?

(a) 50 m
(b) 200 m
(c) 100 m
(d) 400 m

Q72. What will be A's share of profit if the total profit is Rupees 1000 and is to be divided amongst A, B and C in the ratio 3 : 2 : 5?

(a) Rs. 250
(b) Rs. 300
(c) Rs. 500
(d) Rs. 200

Q73. An object travels distance of first 30 m in 5 s and the next distance of 30 m in 3 s. The average speed of the object is:

(a) 6.5 m/s
(b) 9.0 m/s
(c) 4.5 m/s
(d) 7.5 m/s

Q74. At what price should a computer be sold so as to get a profit of 25% when its cost price is Rs. 18000?

(a) Rs. 20500
(b) Rs. 21000
(c) Rs. 23000
(d) Rs. 22500

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Q75. A sum of Rs. 10000 was deposited in a bank that offer 20% annual compound interest. What will the amount be in the bank after 2 year?

(a) Rs. 12000
(b) Rs. 8000
(c) Rs. 14400
(d) Rs. 13600

Q76. What is the HCF of 275 and 308?

(a) 17
(b) 19
(c) 15
(d) 11

Q77. What is the side of a cube if the total surface area is 96 sq. cm?

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

Q78. The sum of a number and 16 times its reciprocal is 10. The number is:

(a) 5
(b) 6
(c) 8
(d) 7

Q79. A sum of money invested at a compound interest amounts to 800 in 2 year and 840 in 3 year. The rate of interest is:

(a) 5%
(b) 7%
(c) 6%
(d) 4%

Q80. The number 800 is divided in 2 parts such that one part is 9/7 times the other. The larger part is:

(a) 480
(b) 500
(c) 450
(d) 510

Q81. What is the distance between the points (-2, 4) and (4, 4)?

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

Q82. The least number consisting of five digits and that is divisible by 97 is x. What is the sum of digits of x?

(a) 15
(b) 13
(c) 16
(d) 17

Q83. ΔDEF is similar to ΔPQR. If the ratio of semi-perimeter of ΔDEF and ΔPQR is 4 : 5 and if PQ = 15cm, then the length of DE is:

(a) 12 cm
(b) 10 cm
(c) 20 cm
(d) 8 cm

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Q84. The median of 2, 9, 11, 7, 3, 4, 8, 5, 3, 6 is:

(a) 3.5
(b) 5
(c) 5.5
(d) 4

Q85. An object starts from rest at x = 0 m and t = 0 s. It moves with a constant acceleration of 3 m/s² along x axis. What is its average velocity between time duration of 2 s and 4 s?

(a) 3 m/s
(b) 6 m/s
(c) 9 m/s
(d) 12 m/s

Q86. Where is the "title block" usually made?

(a) on the upper right hand corner of the drawing sheet
(b) lower right corner of the drawing sheet
(c) on the upper left corner of the drawing sheet
(d) center on the drawing sheet

Q87. In the first angle projection:

(a) Object lies between observer and plane of projection
(b) Object lies in the third quadrant
(c) The plane of the projection lies between the object and the observer
(d) Object lies in the fourth quadrant

Q88. A black surface absorbs _____ as compared to a white surface, under identical conditions.

(a) same heat
(b) negligible heat
(c) more heat
(d) lesser heat

Q89. Identify the metal having the lowest thermal conductivity.

(a) Copper
(b) Mercury
(c) Aluminium
(d) Silver

Q90. Identify the material, having high thermal conductivity.

(a) Wood
(b) Water
(c) Ice
(d) Insulating brick

Q91. In a Class 2 lever, effort and load move in the:

(a) same direction
(b) the movement depends on the load
(c) opposite direction
(d) perpendicular direction

Q92. How much heat should be transferred to the 100 g of an edible oil to raise its temperature by 20°C? (Specific heat of oil 1965 Jkg^(−1)K^(−1))

(a) 4.31 kJ
(b) 2.70 kJ
(c) 1.32 kJ
(d) 3.93 kJ

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Q93. If we compare the effort arm length with the load arm length in a Class 2 lever, _____.

(a) effort arm length is always = load arm length
(b) effort arm length can be greater than, equal to or less than the length of the load arm
(c) effort arm length is always > load arm length
(d) effort arm length is always < load arm length

Q94. A pair of plier and scissor are together considered as a _____ Class 1 lever.

(a) triple
(b) single
(c) double
(d) simple

Q95. If we compare the effort arm length with the load arm length in a class 1 lever, _____

(a) effort arm length is always < load arm length
(b) effort arm length is always = load arm length
(c) effort arm length is always > load arm length
(d) effort arm length can be greater than, equal to or less than the length of the load arm

Q96. Standing up and supporting the lower back with hands, then gently arching back and holding this posture for some time is called as:

(a) Finger fan
(b) Back arching
(c) Wrist stretch
(d) Pectoral stretch

Q97. A sheet of styrofoam of thickness 2 cm and area 0.1 m^2 has a temperature difference of 30°C between its inner and outer surfaces. Considering thermal conductivity as 0.01 J/s m K, the rate of heat flow through the sheet is:

(a) 3.0 J/s
(b) 2.0 J/s
(c) 1.0 J/s
(d) 1.5 J/s

Q98. The view of an object produced on a vertical plane is referred to as:

(a) Right hand side view
(b) Top view
(c) Front view
(d) Left hand side view

Q99. The specific heat capacity of a substance is defined by:

(a) $m(\Delta Q/\Delta T)$
(b) $m(\Delta T/\Delta Q)$
(c) $(1/m)(\Delta Q/\Delta T)$
(d) $(1/m)(\Delta T/\Delta Q)$

Q100. Identify the material having the lowest coefficient of linear expansion.

(a) Brass
(b) Iron
(c) Copper
(d) Lead

PART B

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Q101. In the context of cables, FRC stands for:

(a) Full Rolling Cable
(b) Fat Ribbon Cable
(c) Fast Reeling Cable
(d) Flat Ribbon Cable

Q102. What is the use of an RTD?

(a) Measuring temperature
(b) Measuring pressure
(c) Measuring humidity
(d) Measuring position

Q103. Which of the following shows the proper biasing of a PNP transistor?

(a) base and emitter - forward bias; collector and emitter - reverse bias
(b) base and emitter - forward bias; collector and emitter - forward bias
(c) base and emitter - reverse bias; collector and emitter - forward bias
(d) base and emitter - reverse bias; collector and emitter - reverse bias

Q104. In an op-amp, the input impedance is _____ and the output impedance is _____.

(a) high; high
(b) low; low
(c) low; high
(d) high; low

Q105. In an amplifier with a positive feedback circuit, gain:

(a) Decreases
(b) remains constant
(c) Increases
(d) first increases and then decreases

Q106. A full-wave bridge rectifier consists of:

(a) one diode
(b) two diodes
(c) three diodes
(d) four diodes

Q107. A circuit that changes a code into a set of signals is called

(a) Encoder
(b) multiplexer
(c) Decoder
(d) Selector

Q108. The output impedance of a MOSFET is:

(a) Medium impedance
(b) Low impedance
(c) Extreme high impedance
(d) High impedance

Q109. The waveform in a DSO is stored in _____ form.

(a) Digital
(b) Expanded
(c) Analog
(d) Mixed

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Q110. Which of the following devices requires a battery?

(a) Step-up chopper
(b) stabilizer
(c) Step-down chopper
(d) UPS

Q111. 10 cells each with an EMF of 1.5 V and an internal resistance of 0.1 Ω are connected in series. What will be the total EMF and resistance of the circuit?

(a) 3.21 V and 1.5 Ω
(b) 1.18 V and 1.5 Ω
(c) 4.15 V and 2.0 Ω
(d) 15 V and 1.0 Ω

Q112. For which of the following gates the output is zero when one or more inputs are zero?

(a) OR
(b) NOR
(c) NOT
(d) AND

Q113. Fibre cables used for 'Fibre to Home' installations are _____.

(a) multimode graded
(b) multimode step
(c) multiaxis
(d) single mode

Q114. Which of the following circuit has its output dependent only upon the present input?

(a) Analog Circuits
(b) Flip Flops
(c) Combinational Circuits
(d) Sequential Circuits

Q115. Which of the following is a function of an inductor?

(a) It opposes the flow of AC
(b) It allows the flow of current.
(c) It opposes the flow of DC.
(d) It opposes the flow of both AC and DC.

Q116. In MS Excel, we cannot calculate:

(a) division solutions
(b) integration solutions
(c) arithmetic solutions
(d) multiplication solutions

Q117. 78xx series ICs are:

(a) zener regulated
(b) series regulated
(c) shunt regulated
(d) series and shunt regulated

Q118. Eddy current proximity sensors can detect _____.

(a) cotton
(b) metal
(c) wood
(d) epoxy

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Q119. CRO stands for:

(a) Cathode Relay Oscilloscope
(b) Cathode Ray Oscilloscope
(c) Cathode Rectifier Oscilloscope
(d) Cathode register oscilloscope

Q120. An IC with four NOR gates is:

(a) 7486
(b) 7404
(c) 7432
(d) 7402

Q121. Impedance can be measured by using which of the following equipment?

(a) CRO
(b) LCR meter
(c) Function generator
(d) DSO

Q122. Race Around condition can be avoided in Digital logic circuits using?

(a) Shift Register
(b) Master Slave JK Flip Flop
(c) Full Adder
(d) AND Gate

Q123. Windows 10 is a/an:

(a) booting system
(b) operating and booting system
(c) operating system
(d) counting pulse

Q124. In a bipolar transistor, alpha is the ratio of:

(a) collector current to emitter current
(b) emitter current to collector current
(c) base current to collector current
(d) collector current to base current

Q125. In two-stage RC coupling, the function of a Cc capacitor is:

(a) to allow AC and DC to pass
(b) to block AC and DC
(c) to block DC voltage
(d) to block AC input signal

Q126. A _____ can be represented as two port linear network.

(a) common base
(b) common collector
(c) common emitter
(d) hybrid parameter

Q127. A capacitor consists of _____ metal plates separated by an insulator.

(a) Three
(b) Two
(c) four
(d) one

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Q128. What is the frequency band of shortwave radio transmission?

(a) 1.7 to 30 GHz
(b) 1.7 to 30 MHz
(c) 1.7 to 30 kHz
(d) 1.7 to 30 Hz

Q129. What will be the power required by a bulb load having a resistance of 50 Ω if the voltage applied is 220 V?

(a) 828 W
(b) 1068 W
(c) 968 W
(d) 200 W

Q130. Which of the following is an application of transformers?

(a) AC to AC conversion with isolation
(b) Regulate DC voltage
(c) DC to AC conversion
(d) AC to DC conversion

Q131. If current = 1.414 A and resistance = 50 Ω, then find power.

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

Q132. Input ripple of SMPS is _____.

(a) high
(b) nil
(c) very low
(d) low

Q133. What is the number of cycles completed by a 50-Hz line in 10 seconds?

(a) 5000
(b) 5
(c) 500
(d) 50

Q134. UJT is not used for:

(a) timing circuits
(b) phase control
(c) triggering an SCR/TRIAC
(d) amplification

Q135. The output of Schmitt trigger is:

(a) Sine wave
(b) Square wave
(c) Random wave
(d) Rectangle wave

Q136. Which component of a digital panel meter converts analogue signals into a digital format?

(a) ADC
(b) comparator
(c) magnetic field sensor
(d) hall sensor

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Q137. Heat sink of a power transistor can be used for:

(a) additional heat observation
(b) additional heat dissipation
(c) additional heat dissolution in water
(d) increasing the heat

Q138. Transformer losses are due to:

(a) core and copper losses
(b) primary loss
(c) only core losses
(d) only copper losses

Q139. Which of the following is a function of a resistor?

(a) It both allows and opposes the flow of current.
(b) It opposes the flow of current.
(c) It allows the flow of current.
(d) It neither allows nor opposes the flow of current.

Q140. Which of the following is used as a receiver for fibre optic communication?

(a) LED
(b) IR diode
(c) Photo diode
(d) LDR

Q141. In 8051 microcontroller the resultant of two numbers added is _____.

(a) Erased
(b) not stored anywhere
(c) stored in the accumulator
(d) stored in the register

Q142. The following short name is also called as _____ for diode alternating current.

(a) DIAC
(b) SCR
(c) FET
(d) TRIAC

Q143. The binary representation for the hexadecimal number 4A is:

(a) 101111
(b) 111101
(c) 101101
(d) 1001010

Q144. The motor used in household refrigerators is

(a) single phase induction motor
(b) Hysteresis motor
(c) dc series motor
(d) Reluctance motor

Q145. A push-pull amplifier is used for:

(a) voltage amplification
(b) current amplification
(c) RF signal amplification
(d) power amplification

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Q146. Which of the following statements is true with respect to a Primary Cell?

(a) It can neither be recharged nor be reused.
(b) It cannot be recharged but can be reused.
(c) It can be recharged and reused.
(d) It can be recharged but cannot be reused.

Q147. Most widely used solar cell material is

(a) steel
(b) silicon
(c) mercury
(d) Cast iron

Q148. The device used for converting continuous DC to discontinuous DC is known as a/an _____.

(a) chopper
(b) rectifier
(c) oscillator
(d) amplifier

Q149. A limiter circuit is also known as a:

(a) clamp circuit
(b) chopping circuit
(c) clipper circuit
(d) chopper circuit

Q150. Burglar alarm circuits consist of

(a) LCDs
(b) VCDs
(c) LVDs
(d) IRLEDs

Q151. What happens if a capacitor is placed in parallel with a DC source?

(a) It amplifies the voltage.
(b) The circuit acts as an open circuit.
(c) The circuit acts as a short circuit.
(d) It converts DC to AC.

Q152. If a capacitor is placed in the feedback path of an op-amp circuit, then the circuit can act as

(a) integrator
(b) multiplier
(c) divider
(d) subtractor

Q153. The source of light for optic fibre transmission is _____.

(a) ARC lamp
(b) LED
(c) mercury lamp
(d) incandescent lamp

Q154. BC 194 is the transistor used for:

(a) the amplification of AF and RF signals
(b) the rectification of AC
(c) the amplification of AF signal
(d) the amplification of RF signal

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Q155. How many counter/timer does the 8051 microcontroller have?

(a) 2
(b) 8
(c) 4
(d) 1

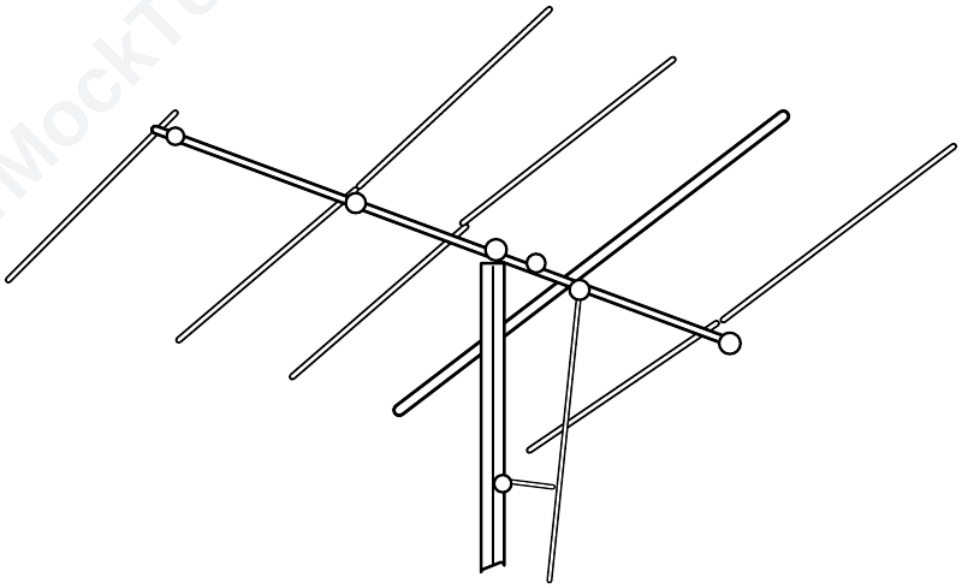
Q156. What happens to the resistance of an RTD with an increase in temperature?

(a) It is uncertain.
(b) It increases.
(c) It remains the same.
(d) It decreases.

Q157. 16-bit registers consist of:

(a) 16 flip-flops
(b) 20 flip-flops
(c) 12 flip-flops
(d) 8 flip-flops

Q158. Identify the type of antenna shown in the following picture.



(a) Circular
(b) Bi-pole
(c) Monopole
(d) Yagi

Q159. The power factor of a D.C. circuit is always

(a) Leading
(b) Unity
(c) Lagging
(d) zero

Q160. In simple oscillators, _____ are used.

(a) UJTs
(b) zener diodes
(c) SCRs
(d) TRIACs

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Q161. How can a higher voltage be obtained from a solar cell?

(a) By connecting multiple cells in series
(b) By increasing its thickness
(c) By connecting multiple cells in parallel
(d) By decreasing its thickness

Q162. For pulse generation, the IC used is:

(a) 7402
(b) 555
(c) 7805
(d) 7432

Q163. What is the material used for the manufacture of fiber optic cables?

(a) Wood
(b) Steel
(c) Plastic
(d) Glass

Q164. The frequency of the rotor current in an induction motor is equal to:

(a) slip × input frequency
(b) slip × stator current
(c) half of the input frequency
(d) the stator current

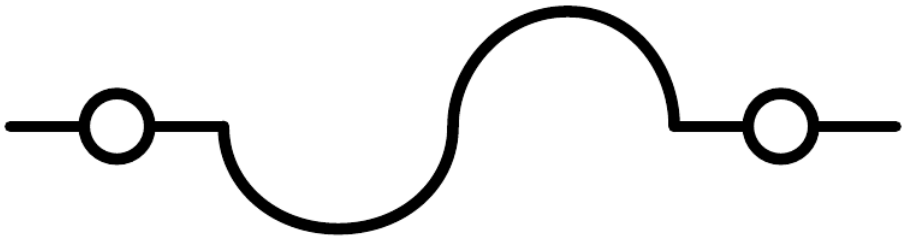
Q165. The combination of two half adders is a _____.

(a) full adder
(b) Schimtt trigger
(c) Comparator
(d) half adder

Q166. The average value of sine wave is _____ times the peak value.

(a) 1.414
(b) 0.637
(c) 2.414
(d) 1.732

Q167. The following figure represents a/an _____.



(a) HEATER
(b) FUSE
(c) MCB
(d) SWITCH

Q168. An LVDT is used for measuring _____.

(a) frequency
(b) speed
(c) temperature

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(d) displacement

Q169. The current towards a junction is:

(a) twice the current towards the junction
(b) equal to the current away from the junction
(c) equal to the sum of currents towards the junction
(d) not equal to the current away from the junction

Q170. What is unity gain amplifier also known as?

(a) Voltage follower
(b) Comparator
(c) Single sided
(d) Differential

Q171. Sine Wave RMS = _____.

(a) Peak voltage/Square root of 5
(b) Peak voltage/Square root of 2
(c) Peak voltage/Square root of 6
(d) Peak voltage/Square root of 3

Q172. In case of an AC input signal in CE Transistor Load line can be given by a plot of

(a) VCE & Ic
(b) VBE vs Ic
(c) VCE & Rc
(d) VBE vs Ib

Q173. Cells are connected in series in order to

(a) Decrease the voltage
(b) Increase the Voltage
(c) Increase the current
(d) Increase the cell life

Q174. The gain of an amplifier with feedback is known as _____ gain.

(a) High
(b) Open loop
(c) Closed loop
(d) Low

Q175. Forward biasing of a PN junction diode is indicated by which of the following connections?

(a) −ve to anode and +ve to cathode for full cycle
(b) +ve to anode and −ve to cathode for full cycle
(c) +ve to cathode and −ve to anode for one half cycle, and +ve to anode and −ve to cathode for the second half cycle.
(d) −ve to cathode and −ve to anode for full cycle

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

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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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