RRB ALP (Electrician) Official Paper (Held On: 22 Jan, 2019 Shift 2) (Previous Year Paper)

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

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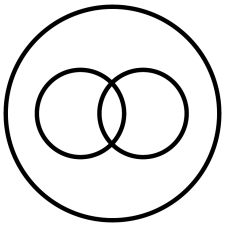
PART A

Q1. Two workers K and L start walking from the same point. K walks 5 km North, then turns right and walks 2 km. Meanwhile, L walks 3 km West, then turns South and walks 4 km. Finally L turns left and walks 5 km. Where is K with respect to L?

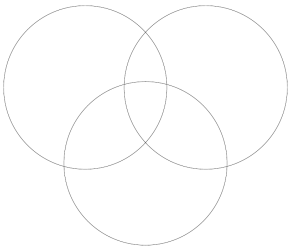
(a) K is 1 km South of L
(b) K is 9 km North of L
(c) K is 9 km South of L
(d) K is 1 km North of L

Q2. Which of the following Venn diagrams best represents the relationship between apples, fruits and eatables?

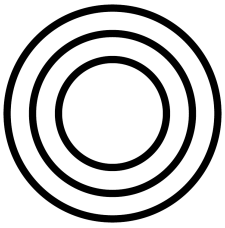
(a)



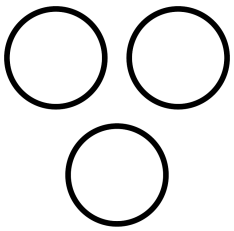
(b)



(c)



(d)



Q3. The sum of the present ages of a father and his son is 60 years. 5 years from now, the ratio of their ages will be 5 : 2. What is the current age of the son?

(a) 25 years
(b) 20 years
(c) 15 years
(d) 10 years

Q4. In a certain code language, 286 means ‘egg is white’, 586 means ‘milk is white’ and 524 means ‘egg or milk’ the code for ‘or’.

(a) 6
(b) 5
(c) 4
(d) 2

Q5. Read the question below followed by two statements. Based on the information, select the option that applies.

Question: How many points did A earn in the game?

Statements:

I) A won 6 times and lost 12 times.

II) Every game lost is a loss of 5 points.

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

Q6. 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 it seems to be at variance from co,,only known facts. You have to decide which of the given conclusions, if any follow(s) from the given statements.

Statement 1 : All wax are crayons.

Statement 2: Some wax are pastels.

Conclusion I: Some pastels are crayons.

Conclusion II: All crayons are pastels.

Conclusion III: No crayons are pastels.

(a) Only conclusion III follows
(b) None of the conclusions follows
(c) Only conclusion II follows
(d) Only conclusion I follows

Q7. 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 it seems to be at variance from commonly known facts. You have to decide which of the give conclusions, if any, follow(S) from the given statements.

Statement 1: No ties are bows.

Statement 2: All bows are silk.

Conclusion I: Some ties are silk.

Conclusion II: Some silk are bows.

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

Q8. A series is given, with one number missing. Choose the correct alternative from the given ones that will complete the series.

4.6, 5.2, 5.8, ?, 7, 7.6

(a) 7.2
(b) 6.8
(c) 6.4
(d) 6.2

Q9. If STARCH is coded as QRYPAF, then how will END be coded as?

(a) QPO
(b) CLB
(c) IHG
(d) EDC

Q10. Select the number that is related to the third number in the same way as the second number is related to the first number.

-13/11 : 11/13 ? 7/5 : ?

(a) -13/7
(b) 5/7
(c) 11/7
(d) -5/7

Q11. Given below is a statement followed by tow conclusions numbered I and II. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follow(s) beyond a reasonable doubt from the information given in the statement.

Statement: A doctor doubled his fees.

Conclusion I: His revenue doubled, so the number of patients have remained the same.

Conclusion II: His revenue decreased, so the number of patients has fallen by more than half.

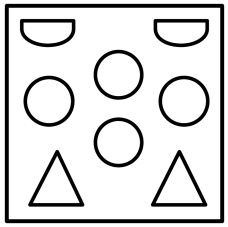
(a) Only conclusion I follows
(b) Both conclusions I and II follow
(c) Neither I nor II follows
(d) Only conclusion II follows

Q12. Find the odd word from the given alternatives.

(a) Chessboard
(b) drum
(c) Compact disc
(d) Ball

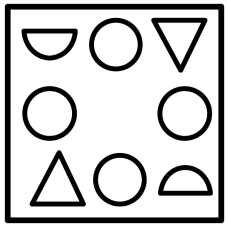
Q13. Choose the figure that is different from the rest.

(a)

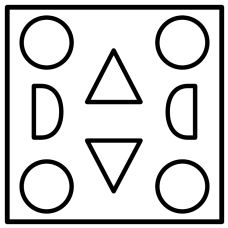


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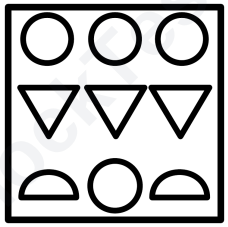
(b)



(c)



(d)



Q14. Find the odd set of letters from the given alternatives.

(a) QOM
(b) GIK
(c) ECA
(d) WUS

Q15. If E % F means E is the brother of F, E & F means E is the sister of F and E $ F means E is the daughter of F, then what does P% Q & R $ S mean?

(a) P is the daughter of S
(b) S is the son of P
(c) S is the daughter of P
(d) P is the son of S

Q16. In a certain code language, '+' represents '×', '-' represents '+', '×' represents '÷',' ÷' represents ' -'. Find out the answer to the following expression in that code language.

8 – 4 × 2 + 6 = ?

(a) 10
(b) 12
(c) 20
(d) 18

Q17. If I + J means I is the father of J; I – J means I is the son-in-law of J; and I * J means I is the wife of J, then which of the following shows that F is the brother of C, considering that C has only one sibling?

(a) C + D – E * F
(b) C * D – E + F
(c) C – E * D + F
(d) C + E – D * F

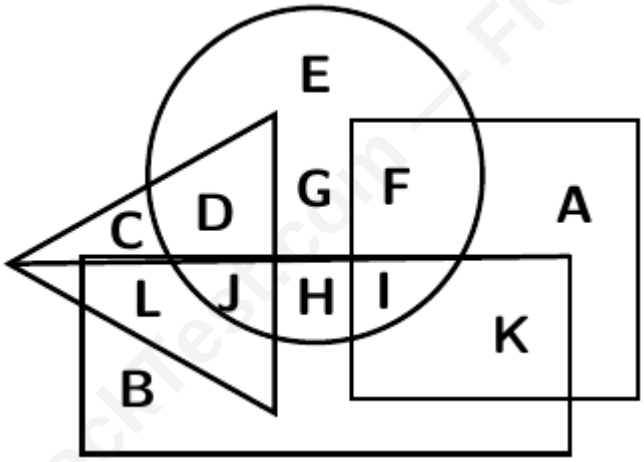
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Q18. Select the word that is related to the third word in the same way as the second word is related to the first word.

Liquid : Oil ? Gas : ?

(a) Phase
(b) Fuel
(c) Air
(d) Solid

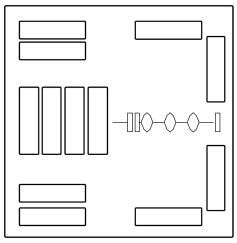
Q19. In the following figure, square represents Nurses, triangle represents cyclists, circle represents bachelors and rectangle represents Americans. Which set of letters represents Americans who are bachelors?



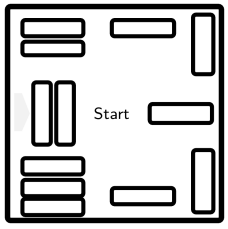
(a) LJ
(b) DGF
(c) IK
(d) JHI

Q20. Choose the figure that is different from the rest.

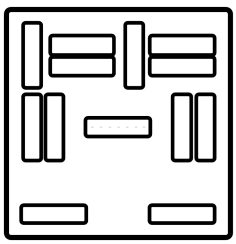
(a)



(b)

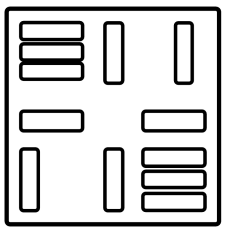


(c)



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(d)

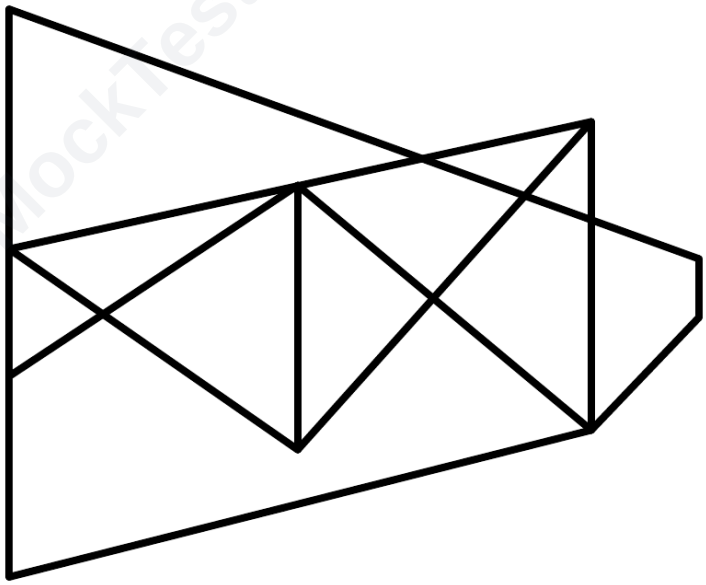


Q21. Which two mathematical symbols need to be interchanged to correct the below equation?

9 + 3 × 2 – 8 ÷ 4 = 8

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

Q22. What is the minimum number of lines required to make the given image?



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

Q23. U, V, W, and X are sitting around a round table. V is sitting next to X. W is facing V. U is to the right of W. Which statement is false?

(a) X is between W and V
(b) X is to the left of V
(c) V is between U and X
(d) V is to the right of U

Q24. A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

UTS, QPO, MLK, IHG,?

(a) EDC
(b) FED
(c) GFE
(d) DCB

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Q25. Four 100 Ω resistors are connected in parallel and this combination is connected across a 100 V supply voltage. Find the power dissipation in each resistor.

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

Q26. Name the writer of the Book “One life is not Enough”

(a) Karan Singh
(b) Shashi Tharoor
(c) Natwar Singh
(d) Mani Shankar Aiyar

Q27. The electric current flowing through a metallic wire is directly proportional to the potential difference V across its ends, provided its _____ remains the same.

(a) voltage
(b) energy
(c) charge
(d) temperature

Q28. 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 24 Ω resistor is:

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

Q29. A concrete wall of thickness 15 cm has inside temperature 25°C and outside temperature 5°C. The rate of heat loss through per square metre of the wall (thermal conductivity 0.81 J/(s m K)) is:

(a) 54 J/s
(b) 163 J/s
(c) 120 J/s
(d) 108 J/s

Q30. How much work is done in moving a charge of 10 C across two points having a potential difference 20 V?

(a) 10 J
(b) 200 J
(c) 2 J
(d) 0.5 J

Q31. If the total energy of the reactants is more than the products of the reaction, heat is released and the reaction is said to be a/an ____ reaction.

(a) exothermic
(b) potential
(c) endothermic
(d) work

Q32. Copper expands about _____ times more than glass for the same rise in the temperature.

(a) six
(b) three
(c) four
(d) five

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Q33. If an object has a mass of 100 kg on Earth, what would be its mass on the Moon?

(a) 0 kg
(b) 100 kg
(c) 16.7 kg
(d) 980 kg

Q34. Which of these is the top apple producing country of the world?

(a) China
(b) Poland
(c) United Kingdom
(d) united States

Q35. The actual weight of a person is determined by his:

(a) Mass and width
(b) Mass
(c) Mass and height
(d) Mass and the acceleration due to gravity

Q36. When did the Constituent Assembly of India meet for the first time?

(a) 9^(th) December 1946
(b) 19^(th) December 1946
(c) 26^(th) November 1956
(d) 26^(th) December 1946

Q37. An object starts moving from rest, with constant acceleration. Its velocity is:

(a) Inversely proportional to time
(b) directly proportional to time
(c) Inversely proportional to time square
(d) Directly proportional to time square

Q38. The boiling and freezing points of water are exactly _____ degrees apart on the Fahrenheit scale.

(a) 180
(b) 273
(c) 100
(d) 50

Q39. An object starts from rest at x= 0 and t = 0. It moves with a constant acceleration of 3m/s² along the x-axis. What is its average velocity between time 4 s to 8 s?

(a) 12 m/s
(b) 3 m/s
(c) 6 m/s
(d) 18 m/s

Q40. Three resistors, 9Ω, 9 Ω and X Ω, are connected in parallel. Total resistance of this parallel combination is 3 Ω. Find the unknown resistance X Ω.

(a) 12 Ω
(b) 3 Ω
(c) 6 Ω
(d) 9 Ω

Q41. Identify the one that is not a Class 1 lever.

(a) Scissors
(b) Pliers
(c) See-saw
(d) Nut cracker

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Q42. Which mountain has the highest elevation in the African continent?

(a) Mt. Everest
(b) Mt. Elbrus
(c) Mt. Kosciusko
(d) Mt. Kilimanjaro

Q43. A file, which is to archive and compress them into one file of smaller size using a program is called as ____.

(a) SSL
(b) ZIP
(c) SAAS
(d) SEO

Q44. What is the approximate percentage of India's populations as a proportion of the world population as of 2018?

(a) 18%
(b) 8%
(c) 12%
(d) 10%

Q45. "Gudi Padwa" is an auspicious day that marks the beginning of the traditional New Year for Marathi Hindus. Which Hindu month is it celebrated in?

(a) Vaisakha
(b) Bhadra
(c) Shravana
(d) Chaitra

Q46. Who was the first Indian to receive a Noble Prize?

(a) Rabindranath Tagore
(b) C V Raman
(c) Mother Teresa
(d) Amartya Sen

Q47. Where is the headquarters of the World Wide Fund for Nature?

(a) Germany
(b) Switzerland
(c) Austria
(d) France

Q48. The abbreviation SR marked on an engineering drawing stands for:

(a) Screw Runner
(b) Spherical Radius
(c) Sectional Recess
(d) Surface Relief

Q49. Work done will be maximum when the angle between the direction of force and the direction of direction of displacement is

(a) 0°
(b) 45°
(c) 60°
(d) 90°

Q50. Water has the maximum density at _____ °C.

(a) 4
(b) 22
(c) 2
(d) 0

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Q51. The rate of change of velocity of an object is constant. Its average velocity is:

(a) The product of the initial and final velocity
(b) Half of the difference of the final and initial velocity
(c) Half of the sum of the initial and final velocity
(d) The sum of the initial and final velocity

Q52. Al-Haram Mosque is the largest mosque in the world. It is situated in:

(a) Batna
(b) Jerusalem
(c) Medina
(d) Mecca

Q53. A wire carries a steady current of 0.2 A for a period of 10 s. The total charge that passes through the wire in this time interval is:

(a) 0.02 C
(b) 50 C
(c) 20 C
(d) 2.0 C

Q54. A ball of mass m is dropped from a height H. At height H/3, the ratio of its potential energy (PE) to kinetic energy (KE) is equal to:

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

Q55. The Ideal-gas equation is _____.

(a) PV/T = μR
(b) V/T = (1/μ) R
(c) P/VT = μR
(d) T/PV = μR

Q56. A piece of programming code inserted into another program to cause damage is called:

(a) Virus
(b) Malware
(c) Spam
(d) Viral

Q57. A 50 g block of copper is heated from 20°C to 60°C. How much heat is transferred to the block (specific heat of copper 386 Jkg^(-1)K^(-1))

(a) 320 J
(b) 772 J
(c) 852 J
(d) 572 J

Q58. Alexander Fleming is best known for the discovery of:

(a) Penicillin
(b) Proton
(c) Bacteria
(d) X rays

Q59. Identify the material having the highest coefficient of volume expansion.

(a) Brass
(b) Hard rubber
(c) Mercury

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(d) Iron

Q60. The relative density of gold is 19.3 Its density in SI unit is:

(a) 1.93×10^2 kg/m³
(b) 19.3 kg/m³
(c) 19.3×10^3 kg/m³
(d) 19.3×10^2 kg/m³

Q61. Which statement with regard to Class 3 lever is true?

(a) The fulcrum is between the load and the effort
(b) The effort is between the load and the fulcrum
(c) The load is in between the effort and the fulcrum
(d) The fulcrum is near the effort

Q62. 18% of 90% of 500 = ?

(a) 79
(b) 80
(c) 81
(d) 78

Q63. If 138.21 + 146.24 + 213.82 – 1523.28 = x – 1267.27 then x = ?

(a) 239.26
(b) 248.36
(c) 248.37
(d) 242.26

Q64. The geometric mean of 9 and 81 is:

(a) 27
(b) 24
(c) 21
(d) 30

Q65. X had 60 coins, out of which 1/2 were Indian coins and 1/6 were US coins. How many other coins did he have?

(a) 20
(b) 24
(c) 18
(d) 21

Q66. B and C do a certain work in 35 days, while A, B & C can do the same work in 17.5 days. In how many days can A do the same work alone?

(a) 35 days
(b) 33.67 days
(c) 32.5 days
(d) 36.33 days

Q67. Two taps take 10 min and 15 min, respectively, to fill an empty pool. The first tap was ON for 4 min, after which it stopped working. How much time will the second tap take to fill the pool?

(a) 10 min
(b) 12 min
(c) 8 min
(d) 9 min

Q68. If a – b = 5 and ab = 24, then $a^2 + b^2$ =

(a) 73
(b) 36
(c) 1

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(d) 72

Q69. A cubical block of side 10 cm and with a mass of 600 g, floats in water. How much of the cube is submerged?

(a) 60%
(b) 50%
(c) 40%
(d) 30%

Q70. A regular dodecahedron has twelve identical _____ faces.

(a) Pentagonal
(b) Quadrilateral
(c) Triangular
(d) Hexagonal

Q71. When 3^(21684) is divided by 5, the remainder is:

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

Q72. Point A divides a line segment BC in the ratio 2 : 1 Co-ordinates of B are (3, -4) and C are (0, 5). What are the coordinates of point A?

(a) (-1, 2)
(b) (-2, 1)
(c) (2, 1)
(d) (1, 2)

Q73. An article of Rs. 14000 was sold at a discount of 10% then a profit of 5% would have been made, what is the cost price?

(a) Rs. 12000
(b) Rs. 12500
(c) Rs. 11500
(d) Rs. 12600

Q74. ΔABC is similar to ΔRST. If the ratio of altitudes of ΔABC : ΔRST is 1 : 4 and if RS = 6 cm, then find the length of AB.

(a) 2 cm
(b) 3 cm
(c) 4 cm
(d) 1.5 cm

Q75. How much will a sum of Rs. 2500 amount to in 1 year at 4% interest rate, when the interest is compunded half - yearly?

(a) Rs. 2601
(b) Rs. 2656
(c) Rs. 2610
(d) Rs. 2600

Q76. A cylindrical wire of length L and radius r has resistance R. The resistance of another wire of the same material but of twice its length and one-fourth its radius is:

(a) 32R
(b) 8R
(c) R
(d) 16R

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Q77. An object is moving with a speed 100 m/s Find the distance travelled by this object in one minute.

(a) 10 km
(b) 6 km
(c) 100 km
(d) 0.6 km

Q78. An article, whose marked price is Rs. 100, was bought at a discount of 10% At what price should it be sold to have a profit of 25%?

(a) Rs. 105
(b) Rs. 110
(c) Rs. 112.50
(d) Rs. 107.5

Q79. What is the value of √735/√375?

(a) 13/5
(b) 5/13
(c) 7/5
(d) 5/7

Q80. A pipe normally takes 4 min to fill a bucket. Due to a hole in the bucket, it takes 6 min. In how much time will the hole empty the full bucket?

(a) 12 min
(b) 15 min
(c) 8 min
(d) 10 min

Q81. If a six digit number 738A6A is divisible by 11 and a three digit number 68X is divisible by 9, then the value of (A + X) is:

(a) 11
(b) 15
(c) 12
(d) 13

Q82. The compound interest on a certain sum of money for 2 years at 10% per annum is Rs. 420. What would be the simple interest on the same sum for the same period and the same rate?

(a) Rs. 375
(b) Rs. 380
(c) Rs. 350
(d) Rs. 400

Q83. What is the side of a cube if its lateral surface area is 324 sq cm?

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

Q84. The duplicate ratio of 4 : 5 is:

(a) 16 : 25
(b) 64 : 125
(c) 4 : 5
(d) 5 : 4

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Q85. What is the angle between the two hands of a clock when the time shown by the clock is 4 hours 15 minutes?

(a) 37.5 degrees
(b) 30 degrees
(c) 40 degrees
(d) 32.5 degrees

Q86. An obtuse angle is:

(a) Equal to 45°
(b) Less than 90°
(c) Equal to 90°
(d) Greater than 90°

Q87. An airplane flies at the speed of 1080 kmph. How much distance does it cover in a flight of 5 sec?

(a) 1250 m
(b) 1625 m
(c) 1350 m
(d) 1500 m

Q88. Which statement with regard to Class 2 lever is true?

(a) The mechanical advantage is always less than 1
(b) The effort is between the load and the fulcrum
(c) The load is in between the effort and the fulcrum
(d) The fulcrum is near the effort

Q89. What is the area of the rectangle whose diagonal is 17 cm and breadth is 8 cm?

(a) 120 cm2
(b) 125 cm2
(c) 128 cm2
(d) 136 cm2

Q90. A statement is given followed by some conclusions as part of the options. Select the conclusion that logically follows the statement.

Statement: Polio vaccines given to children below 5 years of age reduce-instances of polio in the vaccinated children.

(a) All children who are vaccinated will never get polio.
(b) If the cost of the vaccination is more than the cost of treatment, then the vaccination should be suspended.
(c) Some children get polio despite getting polio vaccines.
(d) Some children may get polio via vaccinations.

Q91. Consider a planet whose mass and radius both are one half to that of Earth. An object of weight W on Earth will weigh _____ on that planet.

(a) W/4
(b) W
(c) W/2
(d) 2 W

Q92. A girl of weight 440 N climbs up a rope through a height of 7 m in 20 s. The power expended by the girl is:

(a) 154 W
(b) 15.4 W
(c) 72 W
(d) 36 W

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Q93. In ΔABC, right angle at A. If angle C = 30°, then sec B =

(a) 2
(b) 1/√2
(c) 0.50
(d) √2

Q94. A fishing boat sails 9 km South in still water. It then turns East and sails 8 km, turns North and sails 9 km, then turns to its right and sails 12 km. Where is the boat now with reference to its starting position?

(a) 4 km East
(b) 4 km West
(c) 20 km West
(d) 20 km East

Q95. _____ curve is a curve traced by the free end of a thread unwound from a circle or a polygon in such a way that the thread is always tight and tangential to the circle or side of the polygon.

(a) A logarithmic
(b) A sinusoidal
(c) An exponential
(d) An involute

Q96. 95°F = _____ °C

(a) 45
(b) 25
(c) 15
(d) 35

Q97. What is the least number which, when divided by 5, 6, 8 and 10 leaves a remainder of 2 in each case?

(a) 128
(b) 122
(c) 162
(d) 118

Q98. In a Class 3 lever, the effort and load move:

(a) In the opposite direction
(b) In the same direction
(c) In the perpendicular direction
(d) Depending on the load

Q99. A _____ is a curve generated by a point fixed to a circle, within or outside its circumference, as the circle rolls along a straight line.

(a) Hurwitz
(b) Fermat
(c) Hyperelliptic
(d) Trochoid

Q100. According to National AIDS Control Organisation, almost 50% of new HIV infections are taking place in the age group of:

(a) 15 - 24 years
(b) 32 - 40 years
(c) 24 - 32 years
(d) 40 - 60 years

PART B

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Q101. For a given output and speed, a universal motor as compared to 220 V, 50 Hz supply will require

(a) Less voltage at low frequency
(b) Less voltage at high frequency
(c) High voltage at high frequency
(d) High voltage at low frequency

Q102. The alternators are rated as_____

(a) kW
(b) kVAR
(c) kVA
(d) kWh

Q103. Which of the following meters are not used on D.C. circuit

(a) Commutator motor meters
(b) Mercury motor meters
(c) Induction meters
(d) None of the above

Q104. In the DC motor, iron losses occur in

(a) Field
(b) Armature
(c) Brushes
(d) Commutator

Q105. Aquadag coating is most commonly used in CROs to:

(a) absorb moisture
(b) absorb the extra electrons emitted
(c) absorb and emit the rays
(d) absorb the rays emitted

Q106. The protection system of the household circuit that trips if someone receives a shock is:

(a) ELCB
(b) MCB
(c) HRC fuse
(d) MCCB

Q107. For household wiring and small units, the following should be used as a safety measure:

(a) MCB
(b) OCB
(c) ACB
(d) MCCB

Q108. The function of a trigger level knob on a CRO is:

(a) To change the sweep speeds of time base
(b) To change the length of time base
(c) To change the intensity of the trace
(d) To change the level of the input signal required to get stable display on the scope of the selected channel

Q109. A voltmeter provides the path for:

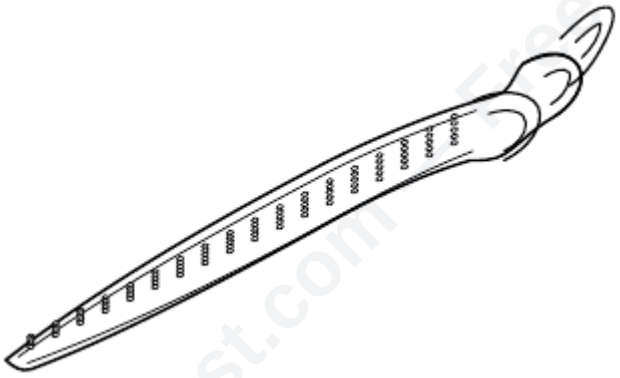
(a) Minimum current
(b) Minimum voltage
(c) Maximum voltage
(d) Maximum current

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Q110. The minimum clearance distance that equipment should be kept away from 50 kV power lines is:

(a) 20 feet
(b) 10 feet
(c) 15 feet
(d) 5 feet

Q111. Identify the type of file shown in the below figure.



(a) RASP cut file
(b) Double cut file
(c) Single cut file
(d) Curved cut file

Q112. Resistance can be measured using:

(a) Voltmeter
(b) Wattmeter
(c) Ammeter
(d) Ohmmeter

Q113. The current on a high voltage line is measured using:

(a) Current shunt
(b) Voltage transformer
(c) Load resistor
(d) Current transformer

Q114. Which among the below is not generally used for distribution systems?

(a) 1 phase, 3 wire system
(b) 3 phase, 3 wire system
(c) 3 phase, 4 wire system
(d) 1 phase, 4 wire system

Q115. Which one of the following is a ferromagnetic material?

(a) Nickel
(b) Lead
(c) Platinum
(d) Copper

Q116. In a delta to star connection of transformer one of the following is true

(a) used for large HV transformers
(b) Used for applications where voltages need to be stepped down
(c) line voltage is equal to phase voltage
(d) Used for applications where voltages need to be stepped up

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Q117. Which of the following is an example for non-conventional energy resource?

(a) petrol
(b) diesel
(c) wind
(d) coal

Q118. Which among the following is not a passive component?

(a) Capacitor
(b) Resistor
(c) Inductor
(d) Diode

Q119. HP is equivalent to how many watts?

(a) 743
(b) 746
(c) 745
(d) 744

Q120. The protective equipment used to protect equipment against lightning stroke is:

(a) shunt reactors
(b) Circuit breaker
(c) Isolator
(d) Lightning arrester

Q121. Boost charging is the process of charging on _____.

(a) Low current for short time
(b) High current for a short time
(c) Low current for a long time
(d) High current for a long Time

Q122. When a capacitor load is connected, the power factor is:

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

Q123. What is another name for Eddy Currents

(a) Foucault Currents
(b) Faculty Currents
(c) Faulty Currents
(d) Berry Currents

Q124. The type of connection commonly used in low voltage distribution systems is:

(a) Star / Star
(b) delta / delta
(c) Star / delta
(d) Delta/ star

Q125. If the nominal voltage of a given battery is 1.2 V, what is the type cell of used?

(a) Lithium ion
(b) Lead acid
(c) Nickel cadmium
(d) Zinc silver oxide

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Q126. When an inductive load is connected, the power factor is:

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

Q127. Which lamp has the best Colour Rendering Index (CRI)?

(a) Fluorescent
(b) Incandescent
(c) LED
(d) High-pressure sodium vapor

Q128. What is the type of cell used for building a laptop battery pack?

(a) Nickel cadmium
(b) Lithium ion
(c) Zinc silver oxide
(d) Lead acid

Q129. PVC insulated non sheathed single core cables are most preferably used in:

(a) Domestic and industrial wiring
(b) Hazardous locations
(c) Dry locations and underground systems
(d) Wet locations

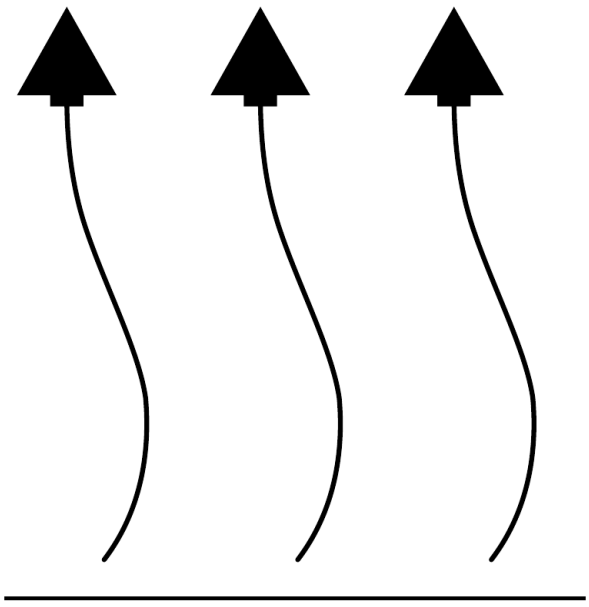
Q130. An alternator provides maximum power when the load angle is:

(a) 180°
(b) 90°
(c) 120°
(d) 45°

Q131. The _____ of a motor depends on the loading of the motor.

(a) power factor
(b) voltage rating
(c) winding
(d) efficiency

Q132. What does the symbol shown below represent?



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(a) Heater
(b) Blower
(c) Fan
(d) Heat

Q133. The visor of a halogen flood lamp is made of:
(a) Mica
(b) Glass
(c) Polycarbonate
(d) Silica

Q134. The direction of a force in a current-carrying conductor can be determined using:
(a) Fleming's Left-Hand Rule
(b) Faraday's Law
(c) Fleming's Fist Rule
(d) Fleming's Right-Hand Rule

Q135. The starter which can be used to reduce the voltage during starting of an induction motor is:
(a) Star starter
(b) Delta starter
(c) Star Delta starter
(d) Delta Star starter

Q136. What is the use of a static frequency changer in a motor?
(a) To achieve direction reversal
(b) To achieve speed regulation
(c) To control power factor
(d) To control cooling

Q137. What is meant by line voltage?
(a) The voltage available between any two phases
(b) The voltage available between ground and neutral
(c) The voltage available between phase and neutral
(d) The voltage available between the three phases

Q138. The type of motor commonly used in washing machines and mixers is:
(a) DC shunt motor
(b) Reluctance motor
(c) synchronous motor
(d) universal motor

Q139. The current drawn by a motor is determined by the stator impedance and _____ applied across the terminals.
(a) force
(b) power
(c) current
(d) voltage

Q140. The minimum insulation resistance value for a system running at a maximum voltage of 250 V is:
(a) 1000 MΩ
(b) 25 MΩ
(c) 100 MΩ
(d) 1000 GΩ

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Q141. What is the insulation resistance test voltage required for an equipment running on maximum voltage of 600 V?

(a) 300 V
(b) 1000 V
(c) 500 V
(d) 100 V

Q142. What is the allowable frequency variation as per IE rule of safety?

(a) 10%
(b) 3%
(c) 5%
(d) 8%

Q143. Which tool is used for finishing a circular hole?

(a) Chisel
(b) Half round file
(c) Drill
(d) Flat file

Q144. What is the use of extended cable of an end pole?

(a) Excess wire tie-up
(b) Preventing the pole from bending
(c) Earthing line
(d) Voltage testing

Q145. Which of the below emits nearly monochromatic light?

(a) Mercury vapor lamp
(b) Bulb
(c) Tubelight
(d) Sodium vapor lamp

Q146. Soldering iron bit is made up of:

(a) Tin
(b) Steel
(c) Brass
(d) Copper

Q147. The principle of solar power is based on:

(a) Hydroelectric effect
(b) Thermoelectric effect
(c) Photovoltaic effect
(d) Fission

Q148. Which is the insulation material used in an electric iron?

(a) Plastic
(b) Rubber
(c) Silica
(d) Mica

Q149. _____ is unlikely to cause an electric shock while doing electric work.

(a) Wet wood
(b) Metal rod
(c) Wet rope
(d) Dry wood

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Q150. Which is the DC motor whose speed is independent of armature current?

(a) Series motor
(b) Compound motor
(c) Brushless motor
(d) Shunt motor

Q151. A three-phase star configuration motor has:

(a) 4 hot wires and 1 neutral wire
(b) 3 hot wires and 1 ground wire
(c) 3 hot wires, 1 neutral and 1 ground wires
(d) 3 hot wires and 1 neutral wire

Q152. Which among these is the heating element used in a steam iron?

(a) Sealed tungsten tube
(b) Mica press tungsten strip
(c) Copper coil
(d) Open tungsten coil

Q153. Identify the type of lug used for connecting aluminium cable to copper bus bar from the given options.

(a) Insulated sleeve lug
(b) Bi-metallic cable lug
(c) Bi-metallic cable connector
(d) Copper lug

Q154. The temperature setting for a bi-metallic strip can be changed by:

(a) Changing the current
(b) Moving it close and away from a heating element
(c) Changing I/P voltage
(d) changing the frequency

Q155. Which part of the motor confirms that it is a DC motor?

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

Q156. In which type of motor a fly wheel is used during heavy loads?

(a) DC Series motor
(b) AC series motor
(c) DC Shunt motor
(d) AC shunt motor

Q157. Latches are _____ circuits.

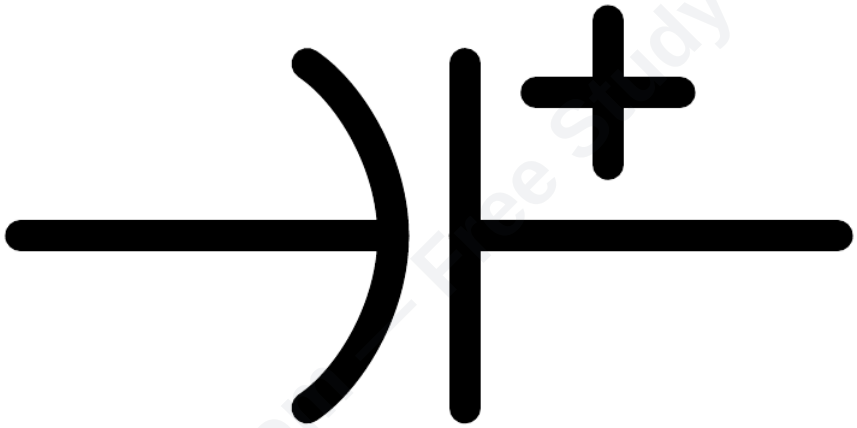
(a) edge triggered
(b) pulse triggered
(c) count triggered
(d) level triggered

Q158. Star to delta transformer works properly when:

(a) Voltage is high
(b) Load is unbalanced
(c) Current is high
(d) The load is balanced as well as unbalanced

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Q159. What is represented by the below symbol?



(a) Battery
(b) Capacitor
(c) capacitor polarized
(d) Resistor

Q160. What is the advantage of armored cable?
(a) It has higher insulation resistance
(b) It can sustain high voltage
(c) It can smoothly travel through gland
(d) It can sustain higher impact

Q161. Which one of the following is not the speed control technique of squirrel cage induction motor?
(a) frequency control
(b) stator voltage control
(c) stator resistance control
(d) rotor resistance control

Q162. The number of poles of a three-phase induction motor running at 750 rpm with 50 Hz frequency is
(a) 4
(b) 8
(c) 6
(d) 2

Q163. Constant loss in a three-phase induction motor is determined by:
(a) Two wattmeter test
(b) Load test
(c) Physical test
(d) No load test

Q164. The flow rate of a single-phase pump can be changed by
(a) Changing I/P voltage
(b) Controlling the valve
(c) Reducing the pipe size
(d) Changing I/P frequency

Q165. In star delta motor, the starting current is:
(a) Reduced approximately by 1/3 times as compared to the original
(b) Reduced approximately by 1/4 times as compared to the original
(c) Increased approximately by 1/3 times as compared to the original

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(d) Increased approximately by 14 times as compared to the original

Q166. For a system with 230 V AC, 5 A current and lag of 30°, what's the reactive power?

(a) 275 VAR
(b) 675 VAR
(c) 175 VAR
(d) 575 VAR

Q167. KVAR meters are used to measure the _____ component of KVA in a three-phase circuit.

(a) Faraday
(b) Lorentz
(c) Biot-Savart's
(d) Wattless

Q168. Which transformer (from the below) is used in a servo stabilizer?

(a) Step-up transformer
(b) Step-down transformer
(c) Multi-tap transformer
(d) Auto transformer

Q169. The starting torque of an induction motor is _____ when rotor resistance equals rotor reactance.

(a) Minimum
(b) Constant
(c) Maximum
(d) Zero

Q170. Which of the following is not an essential part of motor meter?

(a) Operating torque system
(b) Revolution registering system
(c) Inductive pickup
(d) Braking system

Q171. Ohm's law can be applied to

(a) Resistor
(b) Rectifier
(c) Transformer
(d) Zener Diode

Q172. To find real power, the apparent power has to be multiplied by:

(a) Supply factor
(b) Scaling factor
(c) Resonance frequency
(d) Power factor

Q173. What is the relation between line voltage and phase voltage in a delta connection?

(a) Line voltage = √2 phase voltage
(b) Line voltage = √3 phase voltage
(c) Line voltage = phase voltage
(d) Line voltage = 1/2 phase voltage

Q174. In a universal motor, normally the ratio of width of brush to the width of commutator segments is:

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

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Q175. The majority charge carriers in n-type semiconductors are

(a) Holes
(b) Electrons
(c) Neutrons
(d) Protons

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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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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