RRB
JE EE

Previous Year Paper
2014 Shift 1 Allahabad

1. ELISA test is used for detection of

(A) Antibodies
(B) Viral disease
(C) AIDS
(D) All of these

2. Which one of the pairs is not correctly matched?

(A) Abyssinian Plateau - Arabia
(B) Atlas Mountains - North-Western Africa
(C) Guiana Highlands - South-Western Africa
(D) Okavango Basin - Patagonia

3. Variations in the length of day time and night time from season to season is due to

(A) the Earth's rotation about its axis
(B) the Earth's revolution round the Sun in an elliptical manner
(C) latitudinal position of the place
(D) revolution of the Earth on a tilted axis

4. On the planet Earth most of the fresh water exists as ice caps and glaciers. Out of the remaining fresh water, where is the largest proportion?

(A) It is found in the atmosphere as moisture and clouds
(B) It is found in freshwater lakes and rivers
(C) It exists as groundwater
(D) It exists as soil moisture

5. The most important fishing grounds of the world are found in regions where

(A) warm and cold atmospheric currents meet
(B) rivers drain out large amounts of freshwater into the sea
(C) warm and cold oceanic currents meet
(D) continental shelf is undulating

6. A person stood alone in a desert on a dark night and wanted to reach his village which was 5 km East of the point where he was standing. He had no instrument to find the direction but he located the pole star. The most convenient way now to reach his village is to walk in the

(A) direction facing the pole star
(B) direction opposite to the pole star
(C) direction keeping the pole star to his left
(D) direction keeping the pole star to his right

7. A Hartley Oscillator is used for generating
   (A) very low frequency oscillations
   (B) radio-frequency oscillations
   (C) microwave oscillations
   (D) audio frequency oscillations

8. The main purpose of modulation is to
   (A) combine two waves of different frequencies
   (B) achieve wave shaping of the carrier wave
   (C) transmit low frequency information over long distances efficiently
   (D) produce sidebands

9. In positive logic, logic state 1 corresponds to
   (A) positive value
   (B) higher voltage value
   (C) zero voltage level
   (D) lower voltage level

10. The width of the depletion layer /region of a P-N junction
   (A) decreases with light doping
   (B) increases with heavy doping
   (C) is independent of the applied voltage
   (D) is increased under reverse bias

11. Basalt is
   (A) a metamorphic rock and mostly contains felspar and pyroxene
   (B) a metamorphic rock and mostly contains quartz
   (C) an igneous rock and mostly contains felspar and pyroxene
   (D) an igneous rock and mostly contains quartz

12. Fire bricks are used to
   (A) reflect heat
   (B) increase heat flow
   (C) decrease heat flow
   (D) all of these

13. In quick setting cement, the compound added is
   (A) aluminium sulphate
   (B) aluminium silicate
   (C) calcium sulphate
   (D) gypsum

14. If adhesion of reinforced concrete is not perfect,
   (A) the concrete will be weak in compression
   (B) the concrete may break in tension
   (C) the steel be always overstressed
   (D) none of these

15. A train 110 metres long is running with a speed of 60 kmph. In what time will it pass a man who is running at 6 kmph in the direction opposite to that in which the train is going?

(A) 5 sec (B) 6 sec (C) 7 sec (D) 10 sec

16. A train 800 metres long is running at a speed of 78 km/hr. If it crosses a tunnel in 1 minute, then the length of the tunnel (in meters) is

(A) 130 m (B) 360 m (C) 500 m (D) 540 m

17. The square root of $(7+3\sqrt{5})(7-3\sqrt{5})$ is

(A) $5\sqrt{5}$ (B) 2 (C) 4 (D) $3\sqrt{5}$

18. A group of students decided to collect as many paise from each member of group as is the number of members. If the total collection amounts to Rs. 59.29, the number of the member is the group is

(A) 57 (B) 67 (C) 77 (D) 87

19. If $3^{(x-y)} = 27$ and $3^{(x+y)} = 243$, then x is equal to

(A) 0 (B) 2 (C) 4 (D) 6

20. What is the value of $(256)^{0.16} \times (256)^{0.09}$?

(A) 4 (B) 16 (C) 64 (D) 256.25

21. The sum of three numbers is 98. If the ratio of the first to second is 2 : 3 and that of the second to the third is 5 : 8, then the second number is

(A) 20 (B) 30 (C) 48 (D) 58

22. If Rs. 782 be divided into three parts, proportional to (1/2) : (2/3) : (3/4), then the first part is

(A) Rs. 182 (B) Rs. 190 (C) Rs. 196 (D) Rs. 204

23. When a cone is cut by a plane perpendicular to its axis, the curve that results is

(A) a parabola (B) a hyperbola

(C) an ellipse (D) a circle

24. Which of the following is also known as an "Equiangular Spiral"?

(A) Arachnoid Spiral (B) Logarithmic Spiral

(C) Hyperbolic Spiral (D) Delta Spiral

25. The curve generated by a point on the circumference of a circle, which rolls without slipping along another circle outside it, is known as

(A) Hypocycloid (B) Epicycloid

(C) Hypercycloid (D) Cycloid

26. Which of the following is not a dimensionless quantity?

(A) Refractive index (B) Magnetic susceptibility

(C) Quality factor (D) Bandwidth

27. A tuning fork A produces 3 beats per second with tuning fork B. On loading tuning fork B with wax, the beat frequency remains unchanged. If frequency of tuning fork A is 343 Hz, what is the frequency of tuning fork B?

(A) 343 Hz (B) 340 Hz

(C) 346 Hz (D) 349 Hz

28. A positively charged particle is projected parallel to a current carrying conductor (cable) in the direction of current flow in the conductor. The charged particle will

(A) deflect toward the conductor (cable)

(B) deflect away from the conductor (cable)

(C) remain unaffected

(D) may be deflected towards or away from the cable

29. A particle covers 50 m in northward direction, 40 m in eastward direction and $50\sqrt{2}$ m in south-west direction, in a total time of 10 s. What is the average velocity of the particle (with direction)?

(A) $\sqrt{2}\,ms^{-1}$ eastward (B) $\sqrt{2}\,ms^{-1}$ westward

(C) $1\,ms^{-1}$ westward (D) $1\,ms^{-1}$ eastward

30. If the thermal efficiency of a Carnot engine is 0.2, then the Coefficient Of Performance (COP) of a Carnot refrigerator, is

(A) 5 (B) 4 (C) 6 (D) 3

31. During a cycle of processes, the heat transfers are +120 kJ, –16 kJ, –48 kJ and +12 kJ. What is the net work for the cycle?

(A) 60000 N-m (B) 68000 N-m (C) 120000 N-m (D) 44000 N-m

32. An adiabatic process is one in which

(A) no heat enters or leaves the gas

(B) the temperature of the gas changes

(C) the change in internal energy is equal to the mechanical work done

(D) all of these

33. Work done in a free expansion process is

(A) zero (B) minimum

(C) maximum (D) positive

34. In mechanical refrigeration system, the refrigerant has the maximum temperature

(A) in evaporator

(B) before expansion valve

(C) between compressor and condenser

(D) between condenser and evaporator

35. When a current of 2 A flows through a copper wire for 3 micro-seconds, what is the approximate number of electrons crossing the cross-section of the wire during that time (charge of electron = 1.6×10^{-19} C)?

(A) 3.75×10^{11} (B) 3.75×10^{12} (C) 3.75×10^{13} (D) 3.75×10^{14}

36. An electric heating element is to be designed to dissipate 450 W on 250 V mains and is to be made from Nichrome ribbon of width 1 mm and thickness 0.05 mm. If the resistivity of Nichrome is $1.10 \times 10^{-8}\ \Omega - m$, what is the length of the ribbon required?

(A) 63.1 m (B) 6.31 m

(C) 6310 m (D) 631 m

37. Who among the following was appointed as the Chairman of Quality Council of India (QCI) - in September 2014?

(A) Vishal Sengupta
(B) Adil Zainulbhai
(C) Alyque Padamsee
(D) Abdul Zainlabuddin

38. Who has been awarded the GK Reddy Memorial award, 2014, for outstanding contribution to journalism?

(A) Barkha Dutt
(B) Vinod Mehta
(C) Vinod Dua
(D) Nalini Singh

39. With which art form would you associate Amrita Shergil?

(A) Vocal music
(B) Classical dance
(C) Painting
(D) Sculpture

40. Which state of India is famous for the Snake boat races?

(A) Karnataka
(B) Andhra Pradesh
(C) Maharashtra
(D) Kerala

41. In Hindu mythology, whose devotee was Prahlada?

(A) Vishnu
(B) Brahma
(C) Shiva
(D) Indra

42. Which country's national flag is called the Union Jack?

(A) USA
(B) UK
(C) UAE
(D) Uganda

43. Marie Curie won a Nobel Prize for her study of what?

(A) Uranium
(B) Plutonium
(C) Radium
(D) Aurum

44. Which was the first Asian city to host the Olympic games?

(A) Tokyo
(B) Seoul
(C) Beijing
(D) Manila

45. Which of these is usually transmitted by the rat flea?

(A) Diphtheria
(B) Cholera
(C) Malaria
(D) Plague

46. Which two letters come next : Z, Y, X, U, T, S, P, O, N, K, __ , __ ?

(A) H, G (B) H, I

(C) I, H (D) J, I

47. What comes next : U, B, I, P, W, —— ?

(A) D (B) F (C) Q (D) Z

48. In an artificial language, 'briftamint' means 'militant', 'uftonel' means 'occupied', 'uftonalene' means 'occupation'. Which word could mean 'occupant'?

(A) elbrifta (B) uftonamint

(C) elamint (D) briftalene

49. In an artificial language, 'morpirquat' means 'birdhouse', 'beelmorpir' means 'bluebird', 'beelclak' means 'bluebell'. Which word could mean 'houseguest'?

(A) morpirhunde (B) beelmoki

(C) quathunde (D) clakquat

50. In an artificial language, 'relftaga' means 'carefree', 'otaga' means 'careful', 'fertaga' means 'careless'. Which word could mean 'aftercare'?

(A) zentaga (B) tagafer

(C) tagazen (D) relffer

51. In an artificial language, 'aptaose' means 'first base', 'eptaose' means 'second base', 'lartabuk' means 'ballpark'. Which word could mean 'baseball'?

(A) buklarta (B) oseepta

(C) bukose (D) oselarta

52. In an artificial language, 'krekinblaf' means 'workforce', 'dritakrekin' means 'groundwork', 'krekinalti' means 'workplace'. Which word could mean 'someplace'?

(A) moropalti (B) krekindrita

(C) altiblaf (D) dritaalti

53. The shear force and bending moment are zero at the free end of a cantilever beam, if it carries a

(A) point load at the free end

(B) point load at the middle of its length

(C) uniformly distributed load over the whole length

(D) None of these

54. Which of the following flow measuring instruments is an area meter?

(A) Venturimeter (B) Rotameter

(C) Pitot tube (D) Hot wire anemometer

55. What is a Stalagmometer used to measure?

(A) kinematic viscosity (B) surface tension

(C) refractive index (D) optical activity

56. For measurement of potential difference, potentiometer is preferred in comparison to voltmeter because

(A) potentiometer is more sensitive than voltmeter

(B) the resistance of the potentiometer is less than that of the voltmeter

(C) potentiometer is cheaper than voltmeter

(D) potentiometer does not take current from the circuit

57. When the number of turns of a coil is doubled, the current sensitivity of a moving coil galvanometer is doubled. The voltage sensitivity of the galvanometer will

(A) remain the same (B) be halved

(C) be doubled (D) be quadrupled

58. The pressure sensing element of an elastic type pressure gauge is never made in the form of a

(A) Bellow (B) Diaphragm

(C) Strip (D) Bourdon tube

59. Silent Valley is a tropical evergreen forest located in

(A) Kerala (B) Karnataka

(C) Maharashtra (D) Odisha

60. Soil that is transported by wind is known as

(A) Colluvial Soil (B) Eolian Soil

(C) Alluvial soil (D) Glacial Soil

61. On burning, which of the following metals imparts a yellow colour to the flame?

(A) Sodium
(B) Potassium
(C) Calcium
(D) Barium

62. A brown ring appears in a test for which of the following?

(A) Nitrate
(B) Nitrite
(C) Bromide
(D) Iron

63. Choose the option that shows the correct ascending order of Linnaeus' hierarchy.

(A) Kingdom - Order - Species - Genus - Class - Family - Phylum
(B) Kingdom - Family - Genus - Species - Class - Phylum - Order
(C) Kingdom - Phylum - Class - Order - Family - Genus - Species
(D) Species - Genus - Family - Order - Class - Phylum - Kingdom

64. Cell theory is not applicable to which of the following?

(A) Bacteria
(B) Fungus
(C) Algae
(D) Virus

65. Which of the following is the most abundant molecule in a cell?

(A) Water
(B) Carbohydrate
(C) Lipid
(D) Protein

66. Which one of the following plasma proteins is involved in the coagulation of blood?

(A) Serum amylase
(B) A Globulin
(C) Fibrinogen
(D) An Albumin

67. Which of the following is a non-communicable disease?

(A) Measles
(B) Rabies
(C) Diphtheria
(D) Diabetes

68. The magnetizing current drawn by transformers and induction motors is the cause for their ———— power factor.
(A) zero (B) leading (C) lagging (D) unity

69. What does the term "Bias" mean?
(A) The ratio of majority and minority carriers
(B) The amount of current across the P-N junction
(C) A d.c. voltage applied across the P-N junction to control its operation
(D) None of these

70. The primary function of a rectifier filter is to
(A) minimize a.c. input variations
(B) suppress odd harmonics in the rectifier output
(C) stabilize d.c. level of output voltage
(D) remove ripples from the rectified output

71. In a Zener diode shunt voltage regulator, the diode regulates as long as it is kept in ———— condition.
(A) forward bias (B) reverse bias
(C) loaded (D) unloaded

72. In a properly biased NPN transistor, most of the electrons from the emitter
(A) recombine with the holes in the base
(B) recombine in the emitter itself
(C) pass through the base to the collector
(D) are stopped by the junction barrier

73. In a Common Collector amplifier, the voltage gain
(A) cannot exceed unity
(B) depends on output impedance
(C) is dependent on input signal
(D) is always constant

74. Feedback in an amplifier always helps to
(A) control its output
(B) increase its gain
(C) decrease its input impedance
(D) stabilize its gain

75. How many kilogram of sugar costing Rs. 9 per kg must be mixed with 27 kg of sugar costing Rs. 7 per kg so that there may be a gain of 10% by selling the mixture at Rs. 9.24 per kg?

(A) 36 kg (B) 42 kg (C) 54 kg (D) 63 kg

76. A container contains 40 litres of milk. From this container 4 litres of milk was taken out and replaced by water. This process was repeated further two times. How much milk is now contained by the container?

(A) 26.34 litres (B) 27.36 litres

(C) 28 litres (D) 29.16 litres

77. In a flight of 600 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 km/hr and the time of flight increased by 30 minutes. The normal duration of the flight is

(A) 1 hour (B) 2 hours (C) 3 hours (D) 4 hours

78. A man completes a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total distance of the journey in km.

(A) 220 km (B) 224 km (C) 230 km (D) 234 km

79. The ratio between the speeds of two trains is 7 : 8. If the second train runs 400 km in 4 hours, then the speed of the first train is

(A) 70 kmph (B) 75 kmph (C) 84 kmph (D) 87.5 kmph

80. 10 women can complete a work in 7 days and 10 children take 14 days to complete the work. How many days will 5 women and 10 children take to complete the work?

(A) 3 (B) 5

(C) 7 (D) Cannot be determined

81. X and Y can do a piece of work in 20 days and 12 days respectively. X started the work alone and then after 4 days Y joined him till the completion of the work. How long did the work totally last?

(A) 6 days (B) 10 days (C) 15 days (D) 20 days

82. Machine Language
(A) is the language in which programs were first written
(B) is the only language understood by the computer
(C) differs from one type of computer to another
(D) all of these

83. Which of the following is not an output device?
(A) Scanner
(B) Printer
(C) Flat Screen
(D) Touch Screen

84. MOS stands for
(A) Metal Oxide Semiconductor
(B) Most Often Store
(C) Method Organized Stack
(D) None of these

85. The simultaneous execution of two or more instructions is called
(A) Sequential Access
(B) Reduced Instruction set computing
(C) Multiprocessing
(D) None of these

86. What disk is used to cold boot a PC?
(A) Setup disk
(B) System disk
(C) Diagnostic disk
(D) Program disk

87. The Software that allows users to surf the Internet is called a/an
(A) Search Engine
(B) Internet Service Provider (ISP)
(C) Multimedia Application
(D) Browser

88. The ratio of the length of the drawing of the object to the actual length of the object is called
(A) resulting fraction
(B) representative figure
(C) representative fraction
(D) none of these

89. Which of the following is used for drawing curves which cannot be drawn using a compass?
(A) Bow Compass
(B) Protractor
(C) French Curves
(D) Set square

90. In arc welding, the electric arc is produced between the work and the electrode by
(A) Voltage
(B) Flow of current
(C) Contact resistance
(D) All of these

91. Metal patterns are used for
(A) small castings
(B) large castings
(C) complicated castings
(D) large scale production of castings

92. The operation of bending a sheet of metal along a curved axis, is known as
(A) plunging
(B) notching
(C) slitting
(D) forming

93. The flux commonly used in bronze brazing is
(A) zinc chloride based
(B) ammonium chloride based
(C) rosin plus alcohol based
(D) borax based

94. The process used to improve fatigue resistance of the metal by setting up compressive stresses in its surface, is known as
(A) hot piercing
(B) extrusion
(C) cold peening
(D) cold heading

95. Scribing block is used to
(A) hold the round bars during marking
(B) check the trueness of flat surfaces
(C) locate the centres of round bars
(D) check the surface roughness

96. Cast iron and steel pipes are generally produced by
(A) slush casting
(B) investment casting
(C) true centrifugal casting
(D) die casting

97. The internal energy of an ideal gas is a function of
(A) temperature and volume
(B) pressure and volume
(C) pressure and temperature
(D) temperature alone

98. The process of evaluating cost of construction of a project is called
(A) estimation
(B) rough costing
(C) actual costing
(D) workable costing

99. An ideal fluid
(A) is very viscous
(B) obeys Newton's laws of viscosity
(C) is assumed in conduit flow
(D) is frictionless and incompressible

100. The general energy equation is applicable to
(A) Steady flow
(B) Unsteady flow
(C) Non-uniform flow
(D) Turbulent flow

101. The ratio of the inertia force and the viscous force (inertia force/viscous force), is a dimensionless entity known as
(A) Froude number
(B) Pandtl number
(C) Reynolds number
(D) Weisbach number

102. The Saybolt Viscometer makes use of which of the following?
(A) Newton's law of viscosity
(B) Hagen-Poiseuille equation
(C) Stoke's law
(D) None of these

103. The static head of a centrifugal pump is equal to the ———— of suction head and delivery head.
(A) Product
(B) Difference
(C) Sum
(D) None of these

104. In compression test, the fracture in cast iron specimen would occur along
(A) the axis of load
(B) an oblique plane
(C) at right angles to the axis of specimen
(D) would not occur

105. The ratio of change in volume to the original volume is called
(A) Linear strain
(B) Lateral strain
(C) Volumetric strain
(D) Poisson's ratio

106. Which one among the following creeks is not associated with the state of Gujarat?

(A) Kori creek
(B) Godai creek
(C) Kajhar creek
(D) Sir creek

107. World famous 'Rock Garden' is situated at

(A) Kolkata
(B) Jaipur
(C) Chandigarh
(D) Bangalore

108. Teak and Sal are the Principal trees in the forests known as

(A) Tropical moist Evergreen
(B) Dry Deciduous
(C) Tropical moist Deciduous
(D) Dry Evergreen

109. Suez Navigation Canal links up Mediterranean sea with the

(A) Atlantic Ocean
(B) Pacific Ocean
(C) North Sea
(D) Red Sea

110. The Uri Hydroelectric Project is located in

(A) Jammu and Kashmir
(B) Himachal Pradesh
(C) Uttar Pradesh
(D) Haryana

111. When did the Mars Orbiter Mission (MOM) enter the orbit of the planet Mars?

(A) 23rd August 2014
(B) 24th September 2014
(C) 24th August 2014
(D) 23rd September 2014

112. Who among the following enabled India to get its first medal in the 2014 Asian Games i the women's 10 m air pistol event at the Ongnyeon International Shooting Range, b winning Bronze?

(A) Shweta Chaudhary
(B) Bula Choudhary
(C) Saina Nehwal
(D) Sania Mirza

113. Who won the Women's singles Tennis Championship at the 2014 US Open?

(A) Caroline Wozniacki
(B) Venus Williams
(C) Serena Williams
(D) Maria Sharapova

114. A man can row at 5 kmph in still water. If the velocity of current is 1 kmph and it takes him 1 hour to row to a place and come back, how far is the place?

(A) 2.4 km (B) 2.5 km (C) 3 km (D) 3.6 km

115. A boat covers a certain distance downstream in 1 hour, while it comes back in $1\frac{1}{2}$ hours. If the speed of the stream be 3 kmph, what is the speed of the boat in still water?

(A) 12 kmph (B) 13 kmph (C) 14 kmph (D) 15 kmph

116. In a km race, A beats B by 50 m and B beats C by 75 m. By how many metres does A beat C in the same race?

(A) 125 m (B) 135 m (C) 121.5 m (D) 123.5 m

117. A shopkeeper purchased 200 bulbs for Rs. 10 each. However, 5 bulbs were fused and had to be thrown away. The remaining were sold at Rs. 12 each. What will be the percentage profit?

(A) 13% (B) 15% (C) 17% (D) 22%

118. Ashok's mother was three times as old as Ashok 5 years ago. After five years, she will be twice as old as Ashok. How old is Ashok today?

(A) 10 years (B) 15 years (C) 20 years (D) 25 years

119. What is the next term : PERPENDICULAR, ERPENDICULA, RPENDICUL, ——— ?

(A) PENDICUL (B) PENDIC
(C) ENDICU (D) None of these

120. Which term comes next : DHL, PTX, BFJ, ——— ?

(A) CGK (B) KOS
(C) NRV (D) RVZ

121. Find the missing term : A, CD, GHI, ———, UVWXY

(A) LMNO (B) MNO
(C) MNOP (D) NOPQ

122. A bicycle is moving with constant acceleration. The frictional force on the rear wheel is

(A) zero

(B) in the forward direction

(C) in the backward direction

(D) all of these

123. An eye specialist prescribes spectacles having a combination of convex lens of focal lengt 40 cm in contact with a concave lens of focal length 25 cm. What is the power of th combination (assuming common principal axis), in dioptres?

(A) + 1.5 (B) – 1.5

(C) + 6.67 (D) – 6.67

124. What is the number of atoms in 0.1 mol of a triatomic gas, with Avogadro's number bei $= N_A = 6.02 \times 10^{23}$ mol^{-1} ?

(A) 6.02×10^{22} (B) 1.806×10^{23}

(C) 1.806×10^{22} (D) 3.6×10^{23}

125. What is the mass of 0.1 mol of CH_4 ?

(A) 1 g (B) 16 g

(C) 1.6 g (D) 0.1 g

126. The energies E_1 and E_2 of two radiations are 25 eV and 50 eV respectively. T relationship between their wavelengths i.e. λ_1 and λ_2 will be

(A) $\lambda_1 = (1/2)\lambda_2$ (B) $\lambda_1 = \lambda_2$

(C) $\lambda_1 = 2\lambda_2$ (D) $\lambda_1 = 4\lambda_2$

127. The ionization potential of a noble gas is

(A) Maximum in a period

(B) Minimum in a period

(C) Either maximum or minimum in a period

(D) None of these

128. According to the Kirchhoff's Voltage Law (KVL), the algebraic sum of all the IR (I = current, R = resistance) drops and e.m.fs in any closed loop of a network is always

(A) zero
(B) positive
(C) negative
(D) determined by battery emfs

129. If ε_0 is the absolute permittivity of vacuum/space, what would be the absolute permittivity of mica if its relative permittivity is 5?

(A) $5\varepsilon_0$ (B) $5/\varepsilon_0$ (C) $\varepsilon_0/5$ (D) 8.854×10^{-12}

130. There are two AC waveforms e_1 and e_2. If $e_1 = A\sin\omega t$ and $e_2 = B\sin(\omega t - \theta)$, then which of the following is true?

(A) e_1 lags e_2 by θ
(B) e_2 lags e_1 by θ
(C) e_2 leads e_1 by θ
(D) e_1 is in phase with e_2

131. The resistance of a tungsten wire at 150°C is 133 Ω. Its resistance temperature coefficient is 0.0045/°C. What will be the resistance of the wire at 500°C?

(A) 180 Ω (B) 225 Ω (C) 258 Ω (D) 317 Ω

132. The basic requirement of a d.c. armature winding is that it must be

(A) a closed one
(B) a lap winding
(C) a wave winding
(D) a lap or a wave winding

133. The mechanical power developed by the armature of a d.c. motor, is equal to

(A) the product of the armature current and the back e.m.f.
(B) power input minus losses
(C) the product of the power output and the efficiency
(D) power output plus iron losses

134. In performing the short circuit test of a transformer,

(A) the high voltage side is usually short circuited
(B) the low voltage side is usually short circuited
(C) any side is short circuited with preference
(D) None of these

135. Sundarban in the Ganges Delta is named after
(A) a river
(B) a typical type of trees
(C) its scenic beauty
(D) the name of a zamindar

136. In March 1971, who led the civil disobedience movement in East Pakistan?
(A) Sheikh Mujibur Rahman
(B) Maulana Bhasani
(C) Jia-ur-Rahman
(D) Sheikh Haseena Wazed

137. On August 6,1945, over which city was the atom bomb dropped?
(A) Nagasaki (B) Tokyo
(C) Hiroshima (D) Osaka

138. The mean of marks obtained by 200 students was calculated as 40. Later it was detecte that one score of 43 was misread as 34. What is the correct mean?
(A) 40.045 (B) 38.9
(C) 42.7 (D) 35

139. The LCM (lowest common multiple) of 3, 5, 7, and 13 is
(A) 26 (B) 455
(C) 1365 (D) 1/36

140. A 150 m long train takes 10 seconds to pass a man who is moving in the same direction a the train at a speed of 2 kmph. What is the speed of the train?
(A) 52 kmph (B) 56 kmph
(C) 84 kmph (D) 30 kmph

141. A metallic sphere of radius 4.2 cm is melted and recast into the shape of a cylinder radius 6 cm. What is the height of the cylinder?
(A) 2 cm (B) 3.14 cm
(C) 2.74 cm (D) 4.2 cm

142. How many silver coins 1.75 cm in diameter and of 2 mm thickness should be melted form a cuboid of dimensions 5.5 cm × 10 cm × 3.5 cm?
(A) 400 (B) 200 (C) 150 (D) 100

143. Which one of the following is an almost inexhaustible resource?
(A) Fossil fuel
(B) Solar energy
(C) Coal
(D) Petroleum

144. Montreal Protocol aims at
(A) reduction of ozone depleting substances
(B) biodiversity conservation
(C) control of water pollution
(D) control of carbon dioxide emission

145. Eutrophication is caused by
(A) acid rain
(B) nitrates and phosphates
(C) sulphates and carbonates
(D) carbon dioxide and carbon monoxide

146. The soil pollutants that affect the food chain and food web by killing micro-organisms and plants, are
(A) Pathogens
(B) Nitrogen oxides
(C) Pesticides
(D) Agricultural waste

147. Computer follows a simple principle called GIGO which means
(A) Garbage In Garbage Out
(B) Garbage Input Good Output
(C) Good Input Good Output
(D) Greater Instructions Greater Output

148. What is the commonly used unit for measuring the speed of data transmission?
(A) Bits per second
(B) Nano seconds
(C) Characters per second
(D) Mega Hertz

149. _____ are attempts by individuals to obtain confidential information from you by falsifying their identity.
(A) Phishing trips
(B) Computer viruses
(C) Spyware scams
(D) None of these

150. The memory of a computer is commonly expressed in terms of Kilobytes or Megabytes. A byte is made up of
(A) eight decimal digits
(B) eight binary digits
(C) two binary digits
(D) two decimal digits