SECTION - I
ENGLISH

1. The cutting speed of a tool refers to :
   (A) revolutions made by the tool in a specified time
   (B) revolutions turned by the job in a specified time
   (C) distance travelled by the tool in one revolution of the job
   (D) rate at which cutting edge of the tool passes over the surface of work piece

2. Comparative scale is a pair of scale having a common :
   (A) unit
   (B) representative fraction
   (C) length of scale
   (D) least count

3. A tap can fill a tank in 16 minutes and another can empty it in 8 minutes. If the tank is already half full and both the taps are opened together, the tank will be :
   (A) filled in 12 minutes
   (B) emptied in 12 minutes
   (C) filied in 8 minutes
   (D) emptied in 8 minutes

4. Which of the following is the main factor of water pollution ?
   (A) Smoke   (B) Industrial waste (C) Ammonia   (D) Detergents

5. Who was the ruler of India when the East India Company was set up ?
   (A) Aurangzeb   (B) Akbar   (C) Jahangir   (D) Shahjahan

6. In each of the following questions the two words given on one side of double colon i.e., : : bear a certain relationship. The other side shows an incomplete pair marked by a missing word which bears a similar relationship with the given word. Find the missing word out of the options (A) (B) (C) (D).

   Raipur : Chhattisgarh : : __?__ : Uttaranchal
   (A) Nainital   (B) Ranchi   (C) Dehradun   (D) Bhopal

7. In a diesel engine, the fuel is ignited by :
   (A) spark
   (B) injected fuel
   (C) heat resulting from compressing air that is supplied for combustion
   (D) ignitor

8. The line joining the points having the same elevation above the datum surface, is called a :
   (A) contour interval
   (B) contour surface
   (C) contour line
   (D) contour gradient

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9. A zener diode :
   (A) has a high forward voltage rating
   (B) has a sharp break-down at low reverse voltage
   (C) is useful as an amplifier
   (D) has negative resistance

10. The heating element of electric heater is made from :
    (A) Copper   (B) Nichrome   (C) Chromium   (D) Tungsten

11. Which of the following is **not** an operating system ?
    (A) DOS   (B) Oracle   (C) Linux   (D) Windows

12. Ratio of the voltage and the DC current in a closed circuit :
    (A) remains constant
    (B) varies
    (C) increases
    (D) decreases

13. Find the odd one from the given words :
    (A) Kidney   (B) Heart   (C) Eye   (D) Lung

14. River flowing towards the West is :
    (A) Godavari   (B) Krishna   (C) Kaveri   (D) Narmada

15. In Binary Algebra, A+B can be implemented by :
    (A) NAND gates alone
    (B) NOR gates alone
    (C) AND gates alone
    (D) Both (A) and (B)

16. The ratio of Meena's age to the age of her mother is 3 : 8. The difference of their age is 35 years. The ratio of their age after 5 years will be :
    (A) 7 : 12   (B) 5 : 12   (C) 38 : 43   (D) 42 : 47

17. National Securities Depository limited (NSDL) deals with :
    (A) Bearer Bonds
    (B) GDRs
    (C) Shares in electronic format
    (D) None of the above

18. Time and progress chart of a construction, is also known as :
    (A) Bar chart
    (B) Gantt chart
    (C) Modified Milestone chart
    (D) All of the above

19. Fluoride pollution mainly affects:
    (A) teeth   (B) kidney   (C) brain   (D) heart

20. A and B together can do a piece of work in 10 days. B and C together can do it in 12 days, while A and C together can do it in 15 days. C alone can complete it in :
    (A) 50 days   (B) 40 days   (C) 30 days   (D) 20 days

21. Who acted as the Chairman of the Drafting Committee of the Constituent Assembly ?
    (A) Dr. B. R. Ambedkar   (B) C. Rajagopalachari
    (C) Dr. Rajendra Prasad   (D) Jawahar Lal Nehru

22. Who didn't participate in the revolt of 1857 ?
    (A) Rani Lakshmibai   (B) Bhagat Singh
    (C) Nana Saheb   (D) Tantya Tope

23. Soil erosion can be prevented by :
    (A) Grazing   (B) Deep ploughing
    (C) Planting trees   (D) Increasing bird population

24. An ammeter :
    (A) is connected in series in a circuit
    (B) should have low electrical resistance
    (C) absorbs small power
    (D) all of the above

25. Which strength of concrete is maximum ?
    (A) Compressive   (B) Torsional   (C) Fatigue   (D) Flexural

26. If volume and surface area of a sphere are numerically the same, then its radius is :
    (A) 1   (B) 2   (C) 3   (D) 4

27. The purpose of an amplifier is :
    (A) to increase voltage, current or power of an input signal
    (B) to attenuate the signal fed to its input
    (C) to introduce distortion in the signal fed to it
    (D) Both (B) and (C)

28. 300 grams of sugar solution has 40% sugar in it. How much sugar should be added to make it 50% in the solution ?
    (A) 10 gm   (B) 40 gm   (C) 60 gm   (D) 80 gm

29. The ratio between inertia force and viscous force is called :
    (A) Reynold's number   (B) Froude's number
    (C) Weber's number   (D) Euler's number

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40. An ideal diode can be considered as an :

    (A) Amplifier   (B) Bi-stable switch   (C) Oscillator   (D) Fuse

41. A number consists of two digits whose sum is 11. If 27 is added to the number, then the digits change their places. What is the number ?

    (A) 47   (B) 65   (C) 83   (D) 92

42. Which one of the following is the largest single source of the Government's earning from tax revenue ?

    (A) Central Excise   (B) Income Tax   (C) Customs Duty   (D) Corporation Tax

43. According to kinetic theory of gases, the absolute zero temperature is attained when :

    (A) volume of the gas is zero

    (B) pressure of the gas is zero

    (C) kinetic energy of the molecules is zero

    (D) specific heat of gas is zero

44. Leaf springs are subjected to :

    (A) shear stress   (B) direct stress

    (C) bending stress   (D) none of the above

45. If $99x + 101y = 299$ and $101x + 99y = 301$, then the correct solution is :

    (A) $x=1, y=2$ (B) $x=3, y=1$ (C) $x=1, y=3$ (D) $x=2, y=1$

46. The eleventh part of $990 \times \dfrac{990}{990}$ is :

    (A) 99.0   (B) 99.99   (C) 90   (D) 90.9

47. The maximum strength of Lok Sabha is :

    (A) 552   (B) 544

    (C) 642   (D) None of the above

48. The main cause of acid rain (acid precipitation) is :

    (A) SO_2 (B) NO_2 (C) CH_4 (D) All of these

49. A car covers three successive 4 km distances at speed of 10 kmph, 20 kmph and 60 kmph respectively. Its average speed over total distance is :

    (A) 10 kmph   (B) 20 kmph   (C) 25 kmph   (D) 30 kmph

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50. A car can finish a certain journey in 10 hours at a speed of 48 km/hr. In order to cover the same distance in 8 hours, the speed of the car must be increased by :

    (A) 6 km/hr   (B) 7.5 km/hr   (C) 12 km/hr   (D) 15 km/hr

51. Which of the following is **not** a DBMS software ?

    (A) ORACLE   (B) SYBASE   (C) COBOL   (D) SQL Server

52. DPT is used to prevent :

    (A) Tuberculosis   (B) Diphtheria   (C) Polio   (D) All of these

53. 25 buses are plying from Nagpur to Pune and back. In how many ways can a passenger travel from Nagpur, in any one bus, to Pune but return to Nagpur by a different bus.

    (A) 50   (B) 49
    (C) 600   (D) None of the above

54. In a thermocouple , thermo EMF is produced when its :

    (A) One junction is at 0°C and the other at 100°C
    (B) Both junctions are at 0°C
    (C) Both junctions are at 100°C
    (D) Both junctions are at different temperatures

55. The ability of a material to deform without breaking is called :

    (A) resilience   (B) creep   (C) plasticity   (D) elasticity

56. What is the chemical name of "Caustic Soda" ?

    (A) Sodium Chloride   (B) Sodium Hydroxide
    (C) Sodium Carbonate   (D) Sodium Peroxide

57. The longest tape which can measure exactly the length of 8 m 25 cm, 6 m 75 cm and 4 m 50 cm is :

    (A) 35 cm   (B) 75 cm   (C) 1 m 50 cm   (D) 45 cm

58. The variety of coal having the lowest carbon content is :

    (A) Anthracite   (B) Bituminous   (C) Lignite   (D) Peat

59. By selling a towel for ₹ 126.90, a draper loses 6%. For how much should he sell the towel to gain 4% ?

    (A) ₹ 130   (B) ₹ 140.40   (C) ₹ 145.05   (D) ₹ 160

60. A watch shows time as 3.25 when seen through a mirror, time appeared will be :

    (A) 8.35   (B) 9.35   (C) 7.35   (D) 8.25

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61. Who was the first Indian born citizen to have won the Noble Prize for Peace ?
    (A) Rabindranath Tagore
    (B) Mother Teresa
    (C) Kailash Satyarthi
    (D) Amartya Sen

62. Falling drops of water become spheres due to the property of :
    (A) surface tension of water
    (B) compressibility of water
    (C) capillarity of water
    (D) viscosity of water

63. Reaming is one of the operations that needs to be done on a job. Which of the following operations can't be done on this job prior to reaming operation ?
    (A) drilling
    (B) tapping
    (C) boring
    (D) counter boring

64. The most widely used universal gates are :
    (A) OR and AND gates
    (B) NOR and NAND gates
    (C) NOR and AND gates
    (D) NAND and OR gates

65. Which of the following codes needs 7 bits to represent a character ?
    (A) ASCII
    (B) BCD
    (C) EBCDIC
    (D) GRAY

66. Who is the present Chief Minister of Haryana ?
    (A) Bhupinder Singh Hooda
    (B) Captain Abhimanyu
    (C) Manohar Lal Khattar
    (D) None of the above

67. In semi-conductor terminology, the Doping is a process of :
    (A) Purifying semiconductor material
    (B) Increasing impurity percentage
    (C) Removal of foreign atoms
    (D) Increasing the bias potential

68. The movement that came to abrupt end due to the Chauri-Chaura incident was :
    (A) Quit India Movement
    (B) Home Rule Movement
    (C) Non-Cooperation Movement
    (D) Civil Disobedience Movement

69. Find the missing number :
    2, 10, 30, 68, ...
    (A) 130
    (B) 140
    (C) 142
    (D) 138

70. Half-wave Rectifier has theoretical maximum efficiency of :
    (A) 40.6%
    (B) 81.2%
    (C) 78.5%
    (D) 50%

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71. The base of a rectangular solid is a square, and its height is twice its length. If its volume is 1024 cm³, then surface area of its surface is :

    (A) 560 cm²   (B) 640 cm²   (C) 680 cm²   (D) 720 cm²

72. The term biodiversity refers to :

    (A) totality of species of a region   (B) totality of ecosystem of a region
    (C) totality of genes of a region   (D) all of the above

73. Effect of a force on a body depends upon its :

    (A) direction   (B) magnitude   (C) position   (D) all the above

74. The weight of the body at the center of the earth is :

    (A) Zero
    (B) Infinite
    (C) Same as that on the surface of the earth
    (D) None of the above

75. Find the probability of getting a head in a throw of a coin.

    (A) $\dfrac{1}{2}$ (B) 1   (C) 2   (D) none of these

76. A pile foundation is used when :

    (A) the loads are heavy   (B) the soil stratum near ground surface is weak
    (C) both (A) and (B)   (D) neither (A) nor (B)

77. A perfect gas at 27°C is heated at constant pressure till its volume is doubled. The final temperature is :

    (A) 54°C   (B) 327°C   (C) 108°C   (D) 654°C

78. The ratio between the stress produced by gradually applied and suddenly applied load is :

    (A) 1   (B) 2   (C) $\dfrac{1}{2}$ (D) None of these

79. A computer program that converts assembly language to machine language is :

    (A) Compiler   (B) Interpreter   (C) Assembler   (D) Comparator

80. An ordinary transformer works on :

    (A) A.C.   (B) D.C.
    (C) Both A.C. and D.C.   (D) Pulsating D.C.

81. The Saka era began in the year :
    (A) 58 BC   (B) 78 BC   (C) 58 AD   (D) 78 AD

82. A tree 6 m tall casts a 4 m long shadow. At the same time, a flag pole casts a 50 m long shadow. How long is the flag pole ?
    (A) 75 m   (B) 100 m   (C) 150 m   (D) 50 m

83. Nowadays, to reduce air pollution, the buses of Delhi are running on :
    (A) Liquified Petroleum Gas (LPG)   (B) Compressed Natural Gas (CNG)
    (C) Compressed Lead Gas (CLG)   (D) High Speed Lead free Diesel

84. Which acid causes cramps in our muscles ?
    (A) Lactic Acid   (B) Sulphuric Acid
    (C) Hydrochloric Acid   (D) Acetic Acid

85. Which is the most widely used metal for castings ?
    (A) Aluminium   (B) Brass
    (C) Magnesium alloys   (D) Cast Iron

86. Which of the following objects gives a circular section, when it is cut completely by a section plane (irrespective of the angle of the section plane) ?
    (A) Cylinder   (B) Sphere   (C) Cone   (D) Circular lamina

87. If diameter of a circle increases by 30%, by what percent will the area of the circle increase ?
    (A) 30%   (B) 69%   (C) 90%   (D) 138%

88. Which country has won the Gold medal in Men's Hockey in recently concluded Asian Games ?
    (A) Pakistan   (B) India   (C) South Korea   (D) Malaysia

89. Which film has won the National award for the best feature film this year ?
    (A) Bhag Milkha Bhag   (B) Shahid
    (C) Jolly LLB   (D) Gulab Gang

90. An enterprising businessman earns an income of ₹ 1 on the first day of his business. On every subsequent day, he earns an income which is just double of that made on the previous day. On the 10th day of business, his income is :
    (A) ₹ 2^9 (B) ₹ 2^{10} (C) ₹ 10   (D) ₹ 10^2

91. Who among the following stood for total revolution in the country ?
    (A) Jayaprakash Narayan   (B) Jyotiba Phule
    (C) V. P. Singh   (D) Mahatma Gandhi

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92. RAM is used as a short memory because it :
    (A) is volatile   (B) is very expensive
    (C) has small capacity   (D) is programmable

93. In Bourdon tube :
    (A) The deflection is proportional to pressure difference
    (B) The deflection is inversely proportional to pressure difference
    (C) The deflection is independent of pressure difference
    (D) The deflection depends on the air temperature

94. Select the smallest memory size :
    (A) Terabyte   (B) Gigabyte   (C) Kilobyte   (D) Megabyte

95. For transistor action :
    (A) the collector must be heavily doped than the emitter region
    (B) the collector base junction must be forward biased
    (C) the base region must be narrow
    (D) the base region must be N-type material

96. A man rows 750 m in 675 seconds against the stream and returns in 450 seconds. His rowing speed in still water is :
    (A) 3 km/hr   (B) 4 km/hr   (C) 5 km/hr   (D) 6 km/hr

97. Three partners A, B and C invest ₹ 600, ₹ 900 and ₹ 1200 respectively in a business. If they have a profit of ₹ 549, then C's share of profit is :
    (A) ₹ 122   (B) ₹ 183   (C) ₹ 244   (D) ₹ 256

98. Metal, which is present in liquid state above 35° C temperature, is :
    (A) Mercury   (B) Gallium
    (C) Both (A) and (B)   (D) None of these

99. Lamps in street lighting are all connected in :
    (A) series   (B) parallel   (C) series - parallel (D) end - to - end

100. A metal when left exposed to atmosphere for some time becomes coated with green basic carbonate, the metal in question is :
    (A) Nickle   (B) Zinc   (C) Silver   (D) Copper

101. Blood pressure of a healthy person is :
    (A) 90/60   (B) 200/110   (C) 120/80   (D) 140/60

102. An electro-magnet has :
  (A) Soft Iron core (B) Steel core (C) Nickel core (D) Copper core

103. Which comet appears every 76 years ?
  (A) Hailey's (B) Holme's (C) Donati's (D) Alpha Centauri

104. Which country is the winner of FIFA World Cup 2014 for Men ?
  (A) Germany (B) Spain (C) Argentina (D) Brazil

105. The property of a material by which it can be rolled into sheets is called :
  (A) Elasticity (B) Plasticity (C) Ductility (D) Malleability

106. The product of three consecutive numbers is always divisible by :
  (A) 4 (B) 6 (C) 8 (D) 5

107. Hydrophobia is a feature of which disease ?
  (A) Polio (B) Measles (C) Rabies (D) Hepatitis

108. The simple interest is equal to compound interest for a certain sum when :
  (A) rate is same
  (B) time is same
  (C) interest is computed annually and time is one year
  (D) none of the above

109. What is the function of a feeler gauge ?
  (A) To measure pitch of screw (B) To measure surface roughness
  (C) To check thickness of clearance (D) To measure radius of circular rod

110. If $\dfrac{\log 16}{\log 2} = x$, then value of x is :
  (A) 4 (B) $\dfrac{1}{3}$ (C) 2 (D) 5

111. What is the product of all the numbers in the dial of a telephone ?
  (A) 1,58,480 (B) 1,59,450 (C) 1,59,480 (D) None of these

112. Name the boxer who was banned by International Boxing Association for refusing to accept the medal during Asian Games 2014 ?
  (A) M. C. Mary Kom (B) Sarita Devi
  (C) Sarjubala Devi (D) None of the above

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113. Two trains travel in opposite direction at 36 km/hr and 45 km/hr and a man sitting in slower train passes the faster train in 8 seconds. The length of the faster train is :
    (A)   80 m   (B)   100 m   (C)   120 m   (D)   180 m

114. The Prime Minister of India, Narendra Modi, represents which seat in Lok Sabha ?
    (A)   Vadodara   (B)   Ahmedabad   (C)   Varanasi   (D)   Maninagar

115. In arc welding, eyes need to be protected against :
    (A)   sparks   (B)   ultraviolet rays
    (C)   infrared rays   (D)   ultraviolet as well as infrared rays

116. Carbon brushes are used in DC electric motors to :
    (A)   prevent sparking during commutation
    (B)   provide a path for flow of current
    (C)   brush-off carbon deposits on the commutator
    (D)   none of the above

117. You can delete text in MS Word by :
    (A)   selecting the text and pressing the CTRL key
    (B)   selecting the text and pressing the DELETE key
    (C)   selecting the text and pressing the ALT + PAGEUP key
    (D)   selecting the text and pressing the ESC key

118. Writing pencil contains :
    (A)   Solid ink   (B)   Lead   (C)   Lead Sulphate   (D)   Graphite

119. A megger is used for the measurment of :
    (A)   Low valued resistance
    (B)   Medium valued resistance
    (C)   High valued resistance
    (D)   High valued resistance, particularly insulated resistance

120. Stainless steel resists corrosion due to :
    (A)   Carbon   (B)   Sulphur   (C)   Vanadium   (D)   Chromium

121. In a class A amplifier with sinusoidal input signal, the output current flows for :
    (A)   half the cycle   (B)   full cycle
    (C)   less than half cycle   (D)   more than half cycle

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122. The Central Processing Unit (CPU) consists of :
    (A) input, output and processing
    (B) control unit, primary storage and secondary storage
    (C) control unit, arithmetic-logic unit and primary storage
    (D) control unit, processing and primary storage

123. Internet, initially started as -
    (A) TCP/IP experiment
    (B) Network for the defence forces of America
    (C) Group of research scientists of Bell Lab
    (D) Contribution was done by all the above institutions

124. Why Sun looks elliptical in shape during sun-rise and sun-set ?
    (A) Refraction   (B) Reflection   (C) Scattering   (D) Dispersion

125. The missing figure in the question $\frac{3}{9} \times \frac{?}{6} \times \frac{3}{15} = \frac{1}{18}$ is :
    (A) 6   (B) 5   (C) 4   (D) 3

126. Which of the following places does **not** have a Rail Coach Factory ?
    (A) Kapurthala   (B) Kolkata   (C) Perambur   (D) Rai Bareli

127. The air - fuel ratio of the petrol engine is controlled by :
    (A) fuel pump   (B) governor   (C) injector   (D) carburettor

128. Dry density of soil is equal to the :
    (A) Mass of solids to the volume of solids
    (B) Mass of solids to the total volume of soil
    (C) Density of soil in the dried condition
    (D) None of the above

129. Swimming is possible on account of :
    (A) Newton's First Law of Motion   (B) Newton's Second Law of Motion
    (C) Newton's Third Law of Motion   (D) Newton's Law of Gravitation

130. The dance form "Garaba" is from which of the following states ?
    (A) Rajasthan   (B) Maharashtra   (C) Kashmir   (D) Gujarat

131. Which of the following is **not** a chemical change ?
    (A) Combustion of fuel   (B) Electrolysis of acidified water
    (C) Oxidation/Rusting of Iron   (D) Glowing of a platinum wire

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132. Who is the present Foreign Minister of India ?
     (A) Rajnath Singh   (B) Arun Jaitley   (C) Narendra Modi (D) Sushma Swaraj

133. DC Series motors are considered most suitable for the application in :
     (A) Fans   (B) Water Pumps   (C) Traction   (D) Flour-mills

134. In a capacitor, the electric charge is stored in :
     (A) metal plates   (B) dielectric
     (C) both (A) and (B)   (D) none of the above

135. The curve generated by a point on the circumference of a circle, which rolls without slipping
     along outside of another circle is known as :
     (A) Hypocycloid   (B) Epicycloid   (C) Cycloid   (D) Trochoid

136. Lettering on a drawing sheet should have :
     (A) all alphabets in capital letters
     (B) all alphabets in small letters
     (C) in a sentence only first alphabet in capital letter
     (D) in a sentence only abbreviations in capital letter

137. All radiations in a black body are :
     (A) reflected   (B) refracted   (C) transmitted   (D) absorbed

138. A transformer transforms :
     (A) frequency   (B) voltage
     (C) current   (D) both current and voltage

139. If TAP is coded as SZO, then how is FREEZE coded ?
     (A) EQDFYG   (B) ESDFYF   (C) GQFDYF   (D) EQDDYD

140. Heat transfer by radiation mainly depends upon :
     (A) its temperature   (B) nature of the body
     (C) kind and extent of its surface   (D) all of the above

141. Diabetes in general, is the result of :
     (A) under-secretion of insulin   (B) under-secretion of thyroxine
     (C) under-secretion of oestrogen   (D) none of these

142. The power consumption of an LCD as compared to an LED is :
     (A) Same   (B) More   (C) Less   (D) Can't be defined

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143. In a pre-stressed concrete member, it is advisable to use :
    (A) low strength concrete only
    (B) high strength concrete only
    (C) low strength concrete but high tensile steel
    (D) high strength concrete and high tensile steel

144. If B = 2, H = 8 and CAB = 6, then what is the number value of RACE ?
    (A) 31   (B) 30   (C) 28   (D) 27

145. Indicate, which one of the following best describes the term Software ?
    (A) Application programme only   (B) Operating System programme only
    (C) Control system   (D) Both (A) and (B)

146. One of the following doesn't constitute a basic structure of the constitution :
    (A) Republic form of Government
    (B) Supremacy of the Constitution
    (C) Law making procedure in the Parliament
    (D) Federal character of the Indian Polity

147. The price of a table and chair is in the ratio 25 : 6. If the table costs ₹ 950 more than the chair, then cost of two chairs is :
    (A) ₹ 250   (B) ₹ 300   (C) ₹ 500   (D) ₹ 600

148. The frequency of emf generated by a generator depends upon its :
    (A) speed   (B) no. of poles
    (C) both (A) and (B)   (D) none of the above

149. In orthographic projections, the rays are assumed to :
    (A) diverge from station point   (B) converge from station point
    (C) be parallel   (D) none of these

150. Cells are connected in series in order to increase the :
    (A) current capacity   (B) life of the cells
    (C) voltage rating   (D) terminal voltage

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