RRB Secunderabad: Senior Section Engineers Exam

(Held on 21-12-2014)

సూచనలు

(దయచేసి, జాగ్రత్తగా చదవండి మరియు దానికి కట్టుబడి ఉండండి.)

1. అన్ని సూచనలను జాగ్రత్తగా చదవండి మరియు ఓఎమ్ఆర్ ఆన్సర్ పీటుయొక్క వెనక వైపు ఉన్న సూచనలను కూడా జాగ్రత్తగా చదవండి మరియు ఓఎమ్ఆర్ ఆన్సర్ పీటు మరియు క్వశ్చన్ బుక్ లెట్లో వివరాలను నింపండి.

2. పేజీ నెం.1లో ఒక పేరాగ్రాఫ్ హిందీ మరియు ఇంగ్లిష్ లు ఇవ్వబడ్డాయి. (అప్లికేషన్ ఫారంలో మీరు ఏర్కొన్న భాష హిందీ లేదా ఇంగ్లిష్ ప్రకారం) పేరాగ్రాఫ్ను మీ రన్నింగ్ హ్యాండ్ లోకి కాపీ చేసుకోవడం తప్పని సరి. బ్లాక్ లెటర్లను ఉపయోగించవద్దు.

3. (ఎ) క్వశ్చన్ బుక్ లెట్ యొక్క సీరియల్ నెంబరును తప్పనిసరిగా రాయాలి మరియు ఓఎమ్ఆర్ ఆన్సర్ పీటులో ఇవ్వబడ్డ బబుల్స్ లో జాగ్రత్తగా మార్క్ చేయాలి.

   (బి) ఓఎమ్ఆర్ ఆన్సర్ పీటు నెంబరును క్వశ్చన్ బుక్ లెట్లో ఇవ్వబడ్డ స్థలంలో రాయండి.

4. బుక్ లెట్ ను తెరవమని ఆదేశాలు ఇచ్చిన తరువాత మాత్రమే, అభ్యర్థులు గ్రీన్ సీల్ ను తెరవాలి. పేజీ నెంబరు 15 నుంచి 150 ప్రశ్నలు ఉన్నాయా లేదా అని తనిఖీ చేసుకోండి.

5. ప్రశ్నాపత్రంలో 150 ప్రశ్నలుంటాయి. ఇది హిందీ, ఇంగ్లీష్, హిందీ, ఉర్దూ, అస్సామీ, బెంగాలీ, మణిపురి, ఒరియా, తెలుగు, మరాఠీ, గుజరాతీ, మరియు కన్నడ భాషలలో లభ్యం అవుతుంది. ఒకవేళ ఏదైనా సందేహం లేదా గందరగోళం ఉన్నట్లయితే ఆంగ్ల వెర్షన్ చెల్లుబాటు అవుతుంది.

6. అన్ని ప్రశ్నలు కూడా బహుళైచ్ఛిక ప్రశ్నలు.ప్రతి ప్రశ్నకు ఒకే ఒక సరైన సమాధానం ఉంటుంది మరియు దీనికి ఒక్కమార్కు లభిస్తుంది. తప్పు సమాధానాలకు నెగిటివ్ మార్కులున్నాయి. ప్రతి తప్పు సమాధానానికి 1/3 మార్కులు తగ్గించబడతాయి.

7. ప్రశ్న/ల్లో ఏదైనా తప్పు ఉన్నట్లయితే, అభ్యర్థులు శిక్షించబడరు. అయితే పరీక్ష సమయంలో ప్రశ్న/లకు సంబంధించి ఎలాంటి మార్పులు చేయబడవు.

8. సమాధానాలు రాయడానికి మీరు నీలం లేదా నలుపు రంగు పెన్ను మాత్రమే ఉపయోగించాలి. ఒక్కసారి రాసిన సమాధానాలను మార్చడం అనేది అనుమతించబడదు. సమాధాన పత్రంలో మీ సమాధానాలను ఎంతో జాగ్రత్తగా నమోదు చేయండి.

9. చిత్తు పని ఏదైనా ఉన్నట్లయితే, దానిని క్వశ్చన్ బుక్ లెట్ యొక్క చివర ఇవ్వబడ్డ స్థలంలో మాత్రమే చేయాలి. ఎలాంటి అదనపు పత్రం ఇవ్వబడదు.

10. లాగ పుస్తకాలు, కాలిక్యులేటర్లు, స్లైడ్ రూల్స్, మొబైల్ ఫోన్స్, పేపర్లు, డిజిటల్ డైరీలు లేదా ఏదైనా ఇతర ఎలక్ట్రానిక్ వస్తువులు/ఉపకరణాలు అనుమతించబడవు. వీటిని ఉపయోగించినట్లయితే అనర్హులుగా ప్రకటించబడతారు.

11. తుది గంట మోగే వరకు ఏ అభ్యర్థి కూడా పరీక్ష కేంద్రాన్ని విడిచిపెట్టకూడదు. పరీక్షా కేంద్రాన్ని విడిచిపెట్టడానికి ముందు, క్వశ్చన్ బుక్ లెట్ తో పాటు సమాధానాల పీటును కూడా ఇన్విజిలేటర్ ఇవ్వాలి.

1. **In a digital circuit a counter is basically a _____ which counts the number of clock pulses that have arrived at its clock input. Counters use _____ as their basic unit. Fill in the blanks respectively.**
   (A) Register, Flip-flop (B) NAND gate, Register (C) Register, NAND gate (D) Flip-flop, Toggle

2. **"Khalsa" was founded by-**
   (A) Guru Gobind Singh (B) Guru Ramdas (C) Guru Nanak (D) Guru Arjun Dev

3. **In a classical blood pressure measuring instrument in which the doctor observes the rise and fall of mercury, the hand air pump is attached to a-**
   (A) Isobar (B) Transducer (C) Manometer (D) Mercury column

4. **The terms Cope, Drag and Core are associated with-**
   (A) Transformers (B) Castings (C) Laminar flow of liquid (D) Stellar evolution

5. **Conservation of energy corresponds to which law of thermodynamics?**
   (A) Zeroth law (B) First law (C) Second law (D) Third law

6. **According to IPCC, three factors contributing to Global warming are :**
   1) CO_2 emissions
   2) Change of land use deforestation
   3) Non-veg food
   Place them in the order of their contribution to global warming.
   (A) 1, 2, 3 (B) 1, 3, 2 (C) 3, 1, 2 (D) 2, 1, 3

7. **Once 'X' is turned ON, even after removing the gate voltage, 'X' remains ON. 'X' is a:**
   (A) Transistor (B) FET (C) Thyristor (D) MOSFET

8. **Government stipulates limit of concentration of sulphur dioxide in ambient air at 50 units. The unit is:**
   (A) g/cc (B) mg/litre (C) mg/m^3 (D) $\mu g/m^3$

9. **In an orthogonal projection the axis of a cylinder or a cone is denoted by-**
   (A) A thin line (B) A medium dashed line (C) A sequence of long and short dashes (D) Dashes of uniform lengths

10. **$2^{2^3} \div \left(2^2\right)^3$ is equal to:**
    (A) 2^2 (B) 2^1 (C) 2^{-2} (D) 2^{-1}

11. **In our house when we switch on heavy load appliances, we notice that there is slight dip in the glow of the bulb that was already switched on. This is due to-**
    (A) Heavy current drawn by heavy load (B) Additional resistance added to the circuit
    (C) Resistance of electrical wiring (D) Resistance of part of the circuit decreasing from infinity to a positive value

12. **In S.I system, unit of stress is:**
    (A) kg/cm^2 (B) N (C) N/m^2 (D) Watt

13. **Toaster and electric iron, that are commonly used electrical appliances are mainly-**
    (A) Inductive load (B) Capacitive load (C) Resistive load (D) None of these

14. **"Ensure correct joint preparation, correct nozzle size and filler rod size and correct travel speed". We are talking about-**
    (A) Gas welding (B) Arc welding (C) Thermit welding (D) Steam welding

15. $\log_4 5 \times \log_5 6 \times \log_6 7$ is equal to:

(A) $\log\left(\frac{7}{4}\right)$ (B) $\log_4 7$ (C) $\log\left(\frac{4}{7}\right)$ (D) $\log_7 4$

16. Stomata are located in-

(A) Red blood cells (B) Chlorophyll (C) Stomach (D) Leaves

17. $\sin^{-1}(1/2) + \tan^{-1}(1) = ?$

(A) 30° (B) 45° (C) 75° (D) 90°

18. Arrange the following fractions in ascending order.

$\frac{7}{10}, \frac{3}{8}, \frac{4}{5}$

(A) $\frac{3}{8}, \frac{7}{10}, \frac{4}{5}$ (B) $\frac{3}{8}, \frac{4}{5}, \frac{7}{10}$ (C) $\frac{4}{5}, \frac{3}{8}, \frac{7}{10}$ (D) $\frac{7}{10}, \frac{3}{8}, \frac{4}{5}$

19. What is the boiling point of water in Kelvin Scale?

(A) 100 K (B) 273 K (C) 373 K (D) 300 K

20. The sum of first *n* odd natural numbers is:

(A) n^2-1 (B) n^2 (C) $(n+1)^2$ (D) $(n-1)^2$

21. Assume that a 1 ton air conditioner is required to cool a room of size 14' x 14' x 14'. How many 1 ton ACs would be required for a hall of size of 24' x 24' of the same roof height as that of the previous room?

(A) 2 (B) 3 (C) 4 (D) 5

22. Find the next number in the series.

33, 34, 32, 35, 31, 36, _____.

(A) 30 (B) 37 (C) 38 (D) 29

23. The heart of the 'Microwave oven' that produces the microwave range of radiation is called-

(A) Cyclotron (B) Oscillotron (C) Variable frequency oscillator (D) Magnetron

24. To use an AC motor in a DC circuit, which equipment would be required additionally?

(A) Inductor (B) Capacitor (C) Rectifier (D) Inverter

25. What is the ratio of angular speed of second's needle and hour's needle of a clock?

(A) 1 : 60 (B) 60 : 1 (C) 3600 : 1 (D) 720 : 1

26. Acid rain is caused by:

(A) CO & CO_2 (B) SO_2 & O_2 (C) SO_2 & NO_2 (D) NO_2 & O_2

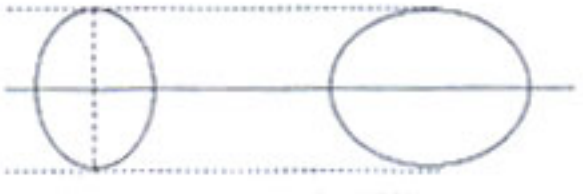
27. Which planet has hot turbulent atmosphere dominated by carbon-di-oxide?

(A) Venus (B) Mars (C) Jupiter (D) Neptune

28. Air India's losses in previous financial year were to the tune of (in crores of rupees):

(A) 4 (B) 40 (C) 400 (D) 4000

29. Consider the following orthogonal projections of an object is and answer what could this object be:



(A) Circle (B) Sphere (C) Ellipse (D) Spheroid

30. **Statement A:**
In coordinate geometry, distance between two points is given by :

$$S = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

Statement B: Pythagoras theorem
Which of the following statements is correct?
(A) Statement A is proved by Statement B (B) Statement B is proved by Statement A
(C) Both the statements are independent (D) None of these

31. **What is the function of push rod in a diesel engine? It transfers force between -**
(A) Cam and rocker arm (B) Connecting rod and piston (C) Crankshaft and piston (D) None of these

32. **Efficiency of Carnot cycle is:**
(A) $1 - \frac{Q_1}{Q_1 + Q_2}$ (B) $1 - \frac{T_1}{T_2}$ (C) $1 - \frac{T_1}{T_1 + T_2}$ (D) $1 - \frac{Q_1}{Q_2}$

33. **Approximate quantity of CO_2 in the atmosphere in PPM (parts per million) is:**
(A) 2 (B) 20 (C) 200 (D) 400

34. **The fidelity of a radio receiver relates to-**
(A) Reproduction of a. f waves (B) Detection of carrier waves (C) Tuning of radio waves (D) None of these

35. **A, B and C can do a piece of work in 12, 15 and 20 days respectively. How long will they take to finish the work together?**
(A) 10 days (B) 5 days (C) 8 days (D) 12 days

36. **Radiation of a black body, in terms of its temperature follows:**
(A) Newton's law of cooling (B) Plank's law (C) Stefan's law (D) Einstein Bose equation

37. **Average Albedo (overall) of the Earth is:**
(A) 5×10^6 candela/day (B) 5×10^7 candela/day (C) 30 to 35% (D) 60 to 65%

38. **The illumination of a beam of light due to scattering on collision with particles suspended in a fluid, is called:**
(A) Raman effect (B) Tyndall effect (C) Snell's effect (D) Huygens effect

39. **Intensity of earthquake is measured in -**
(A) Barometer scale (B) Pyrometer scale (C) Tachometer scale (D) Richter scale

40. **Several nations are following a protocol which binds them to reduce emission targets. This protocol was adopted in:**
(A) Kyoto, Japan (B) Geneva, Switzerland (C) New York, USA (D) Paris, France

41. **Which of these rocks would have alumina as their main component?**
(A) Siliceous (B) Argillaceous (C) Calcareous (D) Igneous

42. **Which of the following is NOT an NGO?**
(A) Amnesty International (B) World Watch (C) PUCL (D) NHRC

43. **Match the following :**

1. Magnetic flux density	a. Tesla
2. Self inductance	b. Weber
3. Magnetic flux	c. Henry

(A) 1-b, 2-c, 3-a (B) 1-c, 2-a, 3-b (C) 1-a, 2-b, 3-c (D) 1-a, 2-c, 3-b

44. **A rectangular garden has an area of 48 sq.m and perimeter of 28 m. What is the length of its diagonal?**

(A) 8 m (B) 10 m (C) 12.5 m (D) 14.14 m (approx.)

45. **Bile is secreted by-**

(A) Stomach (B) Liver (C) Large intestine (D) Gall bladder

46. **Which of these is NOT an Operating System?**

(A) Android (B) iOS (C) Linux (D) Power point

47. **No Go Ring Gauge will have diameter based on _____ diameter of the component.**

(A) Minimum tolerance diameter (B) Maximum tolerance diameter (C) Nominal diameter (D) Average diameter

48. **Which of the following phenomenon is related to the formation of clouds?**

(A) Condensation (B) Evaporation (C) Sublimation (D) Vulcanization

49. **A galvanometer(G) measures upto 100 mA current. It is to be converted to a voltmeter to measure upto 100 volts. What is required to be done?**

(A) Add 100 Ω resistance in series with G (B) Add 1000 Ω resistance in series with G
(C) Add 1 Ω resistance in parallel with G (D) Add 0.1 Ω resistance in parallel with G

50. **Cash-reserve ratio of a commercial bank is fixed by-**

(A) Ministry of Finance (B) Ministry of Commerce (C) RBI (D) Management of the commercial bank

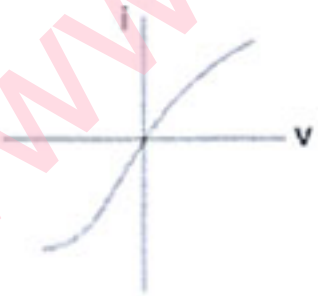
51. **What is the purpose of turbo charging a diesel engine?**

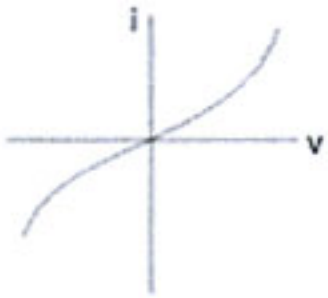
(A) Increase power of engine by burning more fuel (B) Increase the fuel injection and rpm
(C) Increase exhaust gas temperature to increase thermal efficiency (D) Increase inlet air so that engine fuel efficiency and power to weight ratio increases

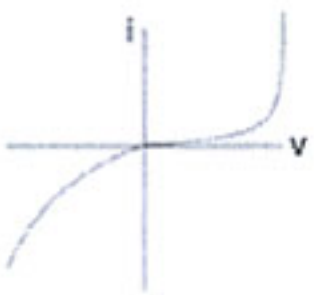
52. **Two bulbs are rated 100W, 220 V each. If these bulbs are connected in series to the mains supply, 220 V, the total power consumed by both the bulbs would be-**

(A) 25 Watts (B) 50 Watts (C) 100 Watts (D) 200 Watts

53. **Which of the Current (i) - Voltage (v) graphs represents a p-n junction diode characteristics?**

(A) 

(B) 

(C) 

(D) 

54. **In a building, water is to be pumped to a height of 10m at the rate of 1 litre/second. Power requirement would be approx:**

(Take 'g' 10 m/sec²)

(A) 10 Watts (B) 100 Watts (C) 500 Watts (D) 1 kW

55. **Angle between two sides of a regular polygon having *n* vertices is:**

(A) $\frac{360}{n}$ (B) $90+\frac{180}{n}$ (C) $\frac{180}{n}$ (D) $180-\frac{360}{n}$

56. **A software user interface feature that allows the user to view something very similar to the end result while the document is being created is called-**

(A) Format creator (B) Format fidelity (C) WYSIWYG (D) WYGIWYS

57. **What is the common property between $LiAlH_4$, Sodium amalgam and $NaBH_4$?**

(A) They are used in removing slag from molten metals
(B) They are used in manufacturing esters
(C) They are reducing agents
(D) They are coated on welding electrodes

58. **A person puts 1 grain of rice in the first square of a chess board. In the subsequent squares, he puts twice that of the previous square. How many grains would he need to put on all the squares of the chess board?**

(A) 64! (B) $2^{64}-1$ (C) $2^{63}-1$ (D) p(64, 2)

59. **By what least number should 192,000 be divided so as to become a perfect cube?**

(A) 2 (B) 5 (C) 3 (D) 7

60. **Match the following -**

1. Nickel	a. Radiator, Water cooling system
2. Brass	b. Bearings, Gears, Propellers
3. Bronze	c. Hard, Corrosion resistant and used in plating on steel

(A) 1-b, 2-a, 3-c (B) 1-a, 2-b, 3-c (C) 1-c, 2-a, 3-b (D) 1-a, 2-c, 3-b

61. **In a certain code, "All The Best" is written as 534; "Best of Luck" is written as 675; "The Good Luck" is written as 478. In this code "Good" would be written as:**

(A) 8 (B) 7 (C) 6 (D) 5

62. **In the context of action of medicines on human body,match the following:**

1. Receptors	a. Catalysts
2. Enzymes	b. Neurologically active
3. Tranquilizers	c. Proteins

(A) 1-c, 2-a, 3-b (B) 1-a, 2-c, 3-b (C) 1-b, 2-a, 3-c (D) 1-a, 2-b, 3-c

63. **El Nino effect is:**

(A) Development of low pressure areas in south east Asian region
(B) Reduction in ice caps resulting in variation in insolation absorption
(C) Prolonged warming in the Pacific Ocean surface area
(D) Sustained tornados in the eastern coast of North America

64. **Loudness of noise is measured in-**

(A) Richter (B) Tesla (C) Decibels (D) Hertz

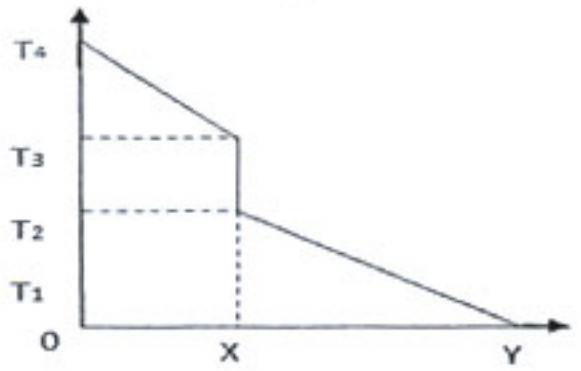
65. **Soaps are manufactured by:**

(A) Reaction of alkalies with glycerol
(B) Reaction of fats with soluble hydroxides
(C) Reaction of calcium and magnesium ions with dilute sulphuric acid
(D) Reaction of dodecyl benzene with H_2SO_4 and then NaOH

66. **In a computer system there are softwares and languages at various levels, like High level Language (HL), Machine Language (ML), Compiler (C). Which of the following is the correct indicative representation from user (U) to the computer (COMP)?**

(A) $U \rightleftharpoons HL \rightleftharpoons C \rightleftharpoons ML \rightleftharpoons Comp$
(B) $U \rightleftharpoons C \rightleftharpoons ML \rightleftharpoons HL \rightleftharpoons Comp$
(C) $U \rightleftharpoons C \rightleftharpoons HL \rightleftharpoons ML \rightleftharpoons Comp$
(D) $U \rightleftharpoons ML \rightleftharpoons HL \rightleftharpoons C \rightleftharpoons Comp$

67. Consider that two solid bodies A and B are touching each other and transmitting heat through conduction. In the graph below, OX represents the first body and XY represents the second body.



State True (T) or False(F).

1)Temperature gradient is more in A than in B

2)The heat flow is determined by Fourier's law

3) Area under the curve represents heat dissipation rate.

(A) T, T, T (B) T, T, F (C) T, F, T (D) F, F, T

68. Which of the following logic gates is a universal gate i.e. its combinations can be used to construct the logic of any other logic gate?

(A) OR (B) AND (C) NAND (D) NOT

69. "Mahabharata" the epic was written by-

(A) Vyasa (B) Kalidasa (C) Tulsidasa (D) Valmiki

70. By which constitutional amendment did the Parliament acquire the right to amend Fundamental Rights?

(A) 23rd (B) 24th (C) 25th (D) 26th

71. If a cube is broken into 27 equal cubes, the total surface area is increased how many times?

(A) 3 times (B) 6 times (C) 9 times (D) 27 times

72. If a : b = 4 : 3 and b : c = 7 : 9, then a : b : c : ?

(A) 24 : 21 : 30 (B) 12 : 15 : 21 (C) 8 : 6 : 12 (D) 28 : 21 : 27

73. English Bond, Flemish Bond, Dutch Bond pertain to-

(A) Masonry work (B) Cement bonding (C) Bonding between beams (D) Bonding in foundation

74. River Damoder is called the 'Sorrow of _____' .

(A) Assam (B) Bengal (C) Orissa (D) Uttar Pradesh

75. Which of these devices performs the function of both input device and output device for a computer?

(A) Joy Stick (B) Mouse (C) Modem (D) Printer

76. A man drives a car 20 km in the North east direction and further 20 km in the South east direction. In which direction will he have to drive to come back to his starting point?

(A) East (B) West (C) North (D) South

77. Sensitive low voltage electronic components are protected from-

(A) Static charge (B) Induction circuit (C) Lightening (D) All of these

78. When we switch on an electric bulb or a fan in our house, the appliance starts almost immediately. The drift velocity of electrons in the wires would be close to-

(A) 1 mm/sec (B) 1 m/sec (C) 3×10^8 m/sec (D) None of these

79. Woolen clothes keep the body warm in winter because-

(A) Wool is a bad conductor of heat (B) Wool is a good conductor of heat (C) Wool increases body temperature (D) Wool decreases body temperature

80. Chemical bonding which results in formation of molecules from atoms is basically-

(A) Nuclear force (B) Short range forces (C) Electrostatic force (D) Gravitational force

81. **Which of the following statement is correct?**
(A) n linear equations with n variables may have a unique solution
(B) n linear equations with n variables may have no solution
(C) Both A & B are correct
(D) Both A & B are wrong

82. **"Common Base" configuration refers to the configuration of a-**
(A) Rectifier (B) Transistor (C) Diode (D) Inverter

83. **The transformer equation $V_1I_1 = V_2I_2$ is the manifestation of-**
(A) Ampere's law (B) Coloumb's law (C) Law of energy conservation (D) Biot Savart's law

84. **Who wrote/invented the Linux software?**
(A) Microsoft (B) Apple INC (C) IBM (D) None of these

85. **What is the common between Rockwell, Brinell and Shore? They pertain to-**
(A) Surface finish (B) Heat treatment (C) Metal turning (D) Hardness

86. **Which of the following information is NOT contained in engineering drawings?**
(A) Tolerances
(B) Material composition
(C) Surface finish
(D) All of these are included in engineering drawing

87. **Which of the following statements is true?**
(A) Value of $\sin\theta$ increases with increase in θ
(B) Value of $\cos\theta$ decreases with increase in θ
(C) Between $0°$ & $90°$, value of $\cot\theta$ increases with increase in θ
(D) Between $0°$ & $90°$, value of $\tan\theta$ decreases with decrease in θ

88. **Strength of commonly used concrete, for constructing low rise residential buildings is:**
(A) 300 psi (B) 8000 psi (C) 15000 psi (D) 25000 psi

89. **If $12a+6b=54$, what is the average of a & b?**
(A) 2.25 (B) 4.5 (C) 6 (D) Data insufficient

90. **Which of the following tissues transports water and minerals from roots to other parts of the plant?**
(A) Phloem (B) Vessel (C) Sieve tube (D) Xylem

91. **Consider the following truth table in Boolean Algebra.**

X	Y	A	B	C	D
0	0	0	0	1	1
0	1	1	0	0	0
1	0	0	1	1	0
1	1	1	1	0	1

Which of the four options A, B, C, D represent the function
$F = xy + xy'$?
(A) A (B) B (C) C (D) D

92. **A tunic fork when sounded together with another tuning fork of known frequency of 240 Hz, emits 2 beats. On loading the tuning fork of known frequency the number of beats heard are one per second. The frequency of the tuning fork is:**
(A) 241 Hz (B) 242 Hz (C) 239 Hz (D) 238 Hz

93. **Based on the choice of the 'Q' point on the current voltage characteristics of the transistor, the amplifiers are classified as:**
(A) Class I, II, III and IV
(B) Class A, B, C and AB
(C) Class A, B, C and D
(D) Class IA, IB, IIA and IIB

94. **Find the next number in the series.**
1, 2, 6, 24, 120, _____.
(A) 240 (B) 480 (C) 560 (D) 720

95. A, B & C invest ₹ 26000, ₹ 34000 and ₹ 10000 respectively in a business. They earn a profit of ₹ 3500. B's share in the profit is:
(A) ₹ 1200 (B) ₹ 1500 (C) ₹ 1700 (D) ₹ 1900

96. A shop reduced the price of an article by 25%. Its sale for that article increased by 25%. What is the net effect on sales in rupees?
(A) No change (B) Increase by 5.75% (C) Decrease by 5.75% (D) Decrease by 6.25%

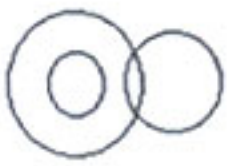
97. An eating disorder of excessive weight loss usually due to undue concern about body shape is known as:
(A) Anorexia nervosa (B) Appetitis (C) Autotrophic disorder (D) Autotrophic syndrome

98. Complete the series:
ab_ab_b_aba_aab
(A) bbab (B) abaa (C) aaaa (D) aaab

99. Find the value of:
3 + 0.03 + 0.003 + 0.0003
(A) 12 (B) 3.0333 (C) 3.3333 (D) 6.0333

100. Currently which 5 year plan is under execution in India?
(A) 12th (B) 13th (C) 14th (D) 15th

101. Who authored the book "My Experiments with Truth"?
(A) Abraham Lincoln (B) Mark Twain (C) Louis Carol (D) M.K Gandhi

102. Which of the following Venn diagram represents the relationship between Human beings, Educated and Teachers?
(A)  (B)  (C)  (D) 

103. A technique of anonymous communication over a computer network using encryption of messages and splitting between the nodes, is called-
(A) Spice routing (B) Onion routing (C) Cabbage routing (D) Flower routing

104. In a transistor radio, a frequency tuner circuit that was conventionally used, would consist of-
(A) An inductor and a variable capacitor in parallel
(B) A bridge rectifier diode feeding the base of a transistor through variable resistance
(C) A multiple coil variac
(D) A potentiometer with variable resisitance

105. The famous queen Chand Bibi who fought against Akbar, defended the city of -
(A) Berar (B) Ahmad nagar (C) Golconda (D) Mysore

106. Tachymeter (or Tacheometer) is an instrument for measuring-
(A) rpm (B) Torque (C) Rotational kinetic energy (D) Distances

107. Which of the following is NOT used for measurement of temperature?
(A) Thermocouples (B) Thermistors (C) Pyrometers (D) All are used

108. Processing speed of computer is measured in-
(A) MIPS(Million Instruction Per Second) (B) MHz of clock
(C) Both (A) and (B) (D) None of these

109. Lufthansa Airlines is from which country?
(A) USA (B) Malaysia (C) Germany (D) Russia

110. A man drives a car and reaches his destination in 4 hours. Had he increased his speed by 10 km/hr, he would have reached in 3 hours, 12 minutes. What distance did the man cover?
(A) 80 km (B) 120 km (C) 160 km (D) 210 km

111. Match the following -

1. Lysosomes	a. Power House
2. DNA	b. Chromosomes
3. Mitochondria	c. Suicide bags

(A) 1-a, 2-c, 3-b (B) 1-c, 2-b, 3-a (C) 1-b, 2-c, 3-a (D) 1-c, 2-a, 3-b

112. In C.G.S system, the unit of strain is:
(A) cm/kg (B) m/kg (C) no unit (D) None of these

113. A hardened steel file is used for removing metal or giving good finish to metals. Arrange the files in the increasing order of smoothness.
(1) Rough file (2) Bastard file (3) Second cut file (4) Smooth file
(A) 4, 3, 2, 1 (B) 1, 2, 3, 4 (C) 2, 1, 3, 4 (D) 4, 3, 1, 2

114. Which of the following software is generally used for managing large number of activities of a civil engineering project?
(A) MS Eng (B) MS Project (C) SQL Projects (D) d Base Project

115. The chemical reaction between cement and water is:
(A) Hydration (B) Chlorination (C) Calcination (D) None of these

116. Arya samaj was founded by-
(A) Raja Ram Mohan Roy (B) Gopal Krishna Gokhale (C) Swami Dayanand Saraswati (D) Anne Besant

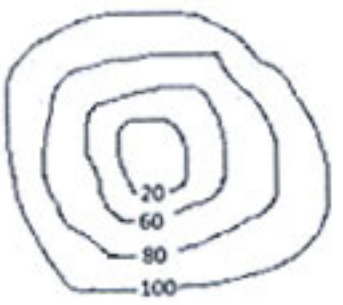
117. In potable water, the dissolved oxygen is stipulated as-
(A) <6μg/l (B) >6μg/l (C) <6mg/l (D) >6mg/l

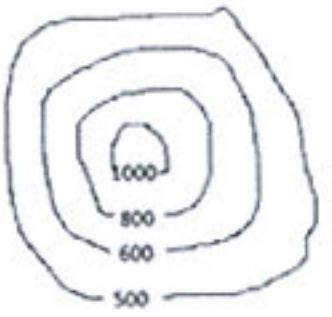
118. A clock is placed on the floor upside down at 9 O'clock. If the minute hand is pointing South East, the hour hand would be pointing-
(A) North east (B) North west (C) South east (D) South west

119. In a car race course, the race starts in North East direction. The road starts curving in a circular path after 5 km. After 3/4 th of the circle the road is straight. In which direction would the cars be running on this straight road?
(A) North west (B) South west (C) South east (D) Insufficient data

120. The process of 'Upsetting' pertains to-
(A) Casting (B) Forging (C) Turning (D) Milling

121. Consider following contours:

1) 

2) 

3) 

Match the following a) Hill b) Pond c) Slope
(A) 1-b, 2-a, 3-c (B) 1-a, 2-b, 3-c (C) 1-a, 2-c, 3-b (D) 1-c, 2-b, 3-a

122. **India's first war of Independence (related to Meerut mutiny) was in:**
(A) 1835 (B) 1857 (C) 1892 (D) 1905

123. **Perform the subtraction operation of binary digits 1001 - 10. The result is:**
(A) 1010 (B) 101 (C) 100 (D) 111

124. **An electrical appliance has a yoke, stator winding, rotor, commutator, carbon brush. The appliance could be a-**
(A) DC motor (B) AC induction motor (C) AC generator (D) Both (B) and (C)

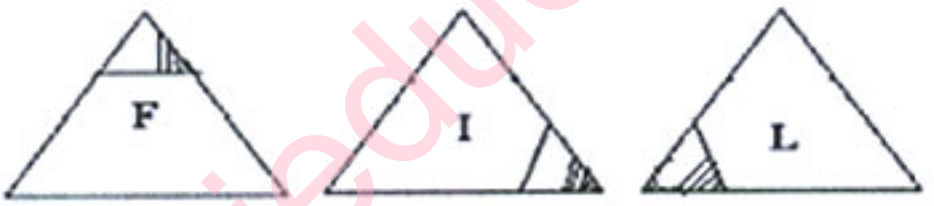
125. **The linkage of atoms of the same elements into longer chains is called:**
(A) Sublimation (B) Catenation (C) Affiliation (D) Linkage

126. **How many Fundamental Rights are guaranteed by the Constitution of India?**
(A) 7 (B) 3 (C) 5 (D) 6

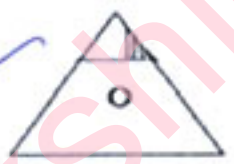
127. **Value of π (approx. value 3.14) is :**
(A) Terminating decimal (B) Recurring decimal
(C) Non-terminating non-repeating decimal (D) Indeterminate

128. **If h is the depth of water held by a dam and A is the cross section area of the water and t is the thickness of wall of the dam, then the maximum pressure on the wall of the dam will depend upon:**
(A) A, h & t (B) A & h (C) h & t (D) h

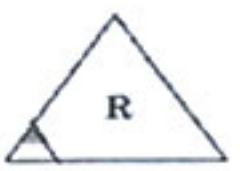
129. **Complete the series logically.**



(A) 

(B) 

(C) 

(D) 

130. **Raja Ravi Varma was famous for:**
(A) His struggle against the British (B) Music & Singing (C) Paintings (D) Hindu reforms

131. **What are capacitor banks in the context of electricity supply to a city?**
(A) They add capacitance to the supply so that electricity is stored in case of breakdown
(B) These banks are storage spaces so that capacitors are available to maintenance engineers in case of failures
(C) They balance the inductive component of transformer coils to smoothen the supply
(D) They balance the inductive loads to improve the power factor

132. **French power declined in India after the battle of-**
(A) Plassey (B) Buxar (C) Talikota (D) Wandiwash

133. **A coin is tossed two times. On both occasions, the result is heads. When the coin is tossed a third time, what is the probability of getting a head?**
(A) 1 (B) $\frac{1}{2}$ (C) $\frac{1}{4}\times\frac{1}{2}$ (D) $\frac{3}{4}\times\frac{1}{2}$

134. **What is morphology?**
(A) Study of insects
(B) Study of Human evolution
(C) Study of forms and structural features of organisms
(D) Study of interdependence of organisms and environment

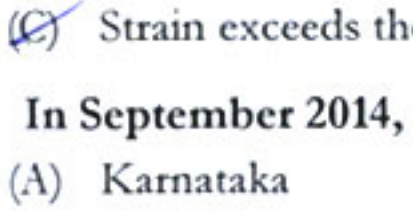
135. **Orthogonal projection of an object shows a rectangle of dimensions 5 cm x 10 cm on the X - Y plane and a circle of diameter 10 cm on the Y-Z plane. What is the volume of the object?**

(A) 5000 cm^3 (B) $\pi.5^3$ (C) $\frac{\pi.10^3}{4}$ (D) 2500 cm

136. **A man said to a lady "Rishi's mother is the only child of your father". How is the lady related to Rishi?**

(A) Mother (B) Sister (C) Wife (D) Daughter

137. **Consider the following orthogonal projections of an object.**



This object is a-

(A) Tetrahedron (B) Conical cylinder (C) Prism (D) Trapezium

138. **Match the following:**

1. Rectifier	a. Power electronics, Motor speed control, Battery charging, Phase control
2. Transistor	b. Rectifiers, Wave clipper circuits
3. SCR	c. Amplifiers, Switches

(A) 1-a, 2-c, 3-b (B) 1-b, 2-a, 3-c (C) 1-b, 2-c, 3-a (D) 1-c, 2-a, 3-b

139. **An interpretation of the Indian Constitution is based on the spirit of the-**

(A) Fundamental rights (B) Fundamental duties (C) Preamble (D) Directive principles

140. **Earthquakes cause damage when-**

(A) Stress exceeds the strain of materials (B) Stress exceeds the strength of materials

(C) Strain exceeds the strength of materials (D) Strength exceeds the strain of materials

141. **In September 2014, which state was affected by flood?**

(A) Karnataka (B) Madhya Pradesh (C) Gujarat (D) Jammu & Kashmir

142. **A merchant is mixing two qualities of rice, one which he procures at ₹ 70/Kg and second at ₹ 40/Kg in the ratio of 7 : 3 respectively. At what price should he sell the mixture to earn a profit of 20%?**

(A) ₹ 73.20/Kg (B) ₹ 74/Kg (C) ₹ 74.6/Kg (D) ₹ 75.4/Kg

143. **The average score of girls in a class is 75 marks. The average scores of boys in the class is 65 marks. If the average of the class is 68.75 marks, what is the ratio of boys to girls in the class?**

(A) 2 : 5 (B) 5 : 2 (C) 3 : 5 (D) 5 : 3

144. **Out of the following, which is NOT a type of welding?**

(A) AC Arc (B) DC Arc

(C) MIG (D) All of these are different types of weldings

145. **A map mentions the scale 1 cm=1 km.**

The scale is in the ratio:

(A) $1 : 10^3$ (B) $1 : 10^4$ (C) $1 : 10^5$ (D) $1 : 10^6$

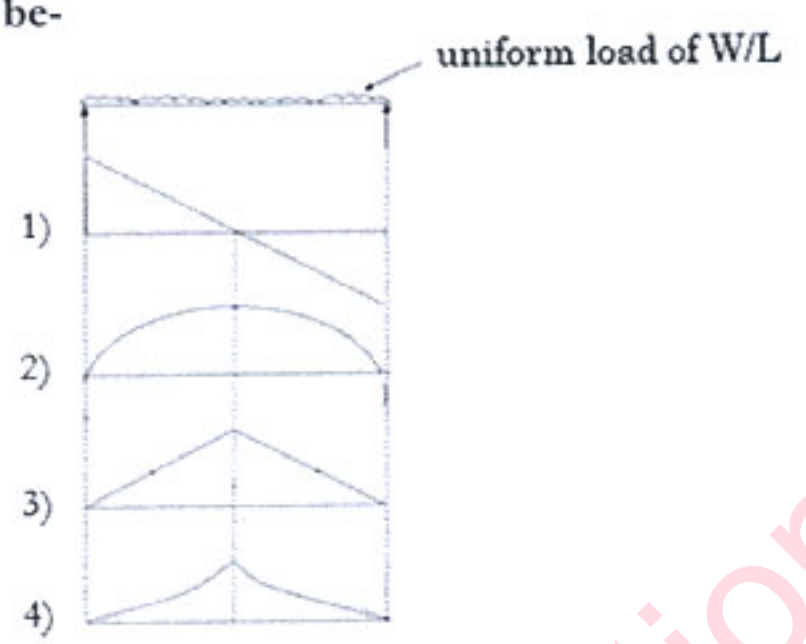
146. **Plants get water through roots because of:**

(A) Viscosity (B) Elasticity (C) Gravity (D) Surface tension

147. In a circuit in which resistance, capacitance and inductance are in series, the impedance would be-

(A) $\frac{V}{\sqrt{R^2+(X_L-X_C)^2}}$ (B) $\sqrt{R^2+(X_L-X_C)^2}$ (C) $i\sqrt{R^2+(X_L-X_C)^2}$ (D) $\frac{1}{\sqrt{R^2+(X_L-X_C)^2}}$

148. In the case of a uniformly distributed load on a simply supported beam, the bending moment diagram would be-



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

149. The first Indian railway train journey between Bombay and Thane was in the year-

(A) 1857 (B) 1853 (C) 1818 (D) 1854

150. Glycerol can be represented by chemical formula:

(A) $C_2H_5O_2$ (B) C_3H_7OH (C) C_3H_5OH (D) $C_3H_8O_3$