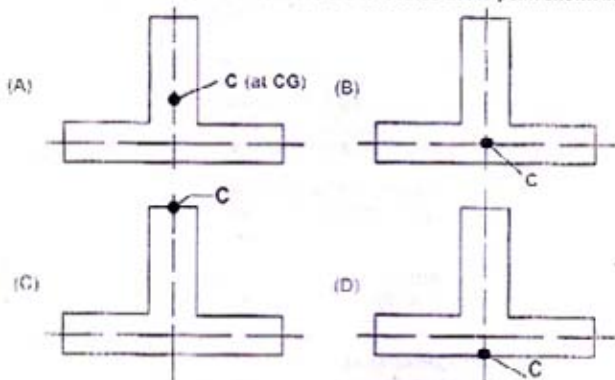# RRB Secunderabad Sr. Section Engineers Exam

(Held on 21-12-2014)

SECTION I
ENGLISH VERSION

1. When donor type impurity is added to a semi-conductor material
   - (A) electrons are generated and material is N-type
   - (B) electrons are generated and material is P- type
   - (C) holes are generated and material is called P-type
   - (D) holes are generated and material is called N-type

2. To increase bandwidth, the distributed amplifier utilizes
   - (A) common base configuration
   - (B) Transmission line
   - (C) tuned Circuit
   - (D) Cascade amplifier

3. A p-n junction diode's dynamic conductance is directly proportional to
   - (A) the applied voltage
   - (B) the temperature
   - (C) its current
   - (D) the thermal voltage

4. King closers are related to
   - (A) doors and windows
   - (B) King post truss
   - (C) Queen Post truss
   - (D) Brick Masonry

5. Seasoning of timber is required to
   - (A) Soften the timber
   - (B) Harden the timber
   - (C) Straighten the timber
   - (D) Remove sap from the timber

6. Batching in concrete refers to
   - (A) Controlling the total quantity of each batch
   - (B) Weighing accurately, the quantity of each material for a job before mixing
   - (C) Controlling the quantity of each material into each batch
   - (D) Adjusting the water to be added in each batch according to the moisture content of the materials being mixed in the batch

7. Gypsum is used as an admixture in cement grouts for
   - (A) accelerating the setting time
   - (B) retarding the setting time
   - (C) increasing the plasticity
   - (D) reducing the grout shrinkage

8. The maximum deflection of a fixed beam carrying a central load W is equal to (other notations standard)
   - (A) $\dfrac{WL^3}{48EI}$
   - (B) $\dfrac{WL^3}{96EI}$
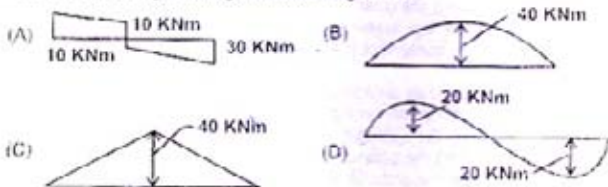   - (C) $\dfrac{WL^3}{192EI}$
   - (D) $\dfrac{5}{384} \dfrac{WL^3}{EI}$

9. In a thin-wall T-section, the shear centre C is located at the point shown in

(A)

C (at CG)

(B)

C

(C)

C

(D)

C

10. A simply supported beam is loaded as below

20 KN
10 KN/m
2 m   2 m
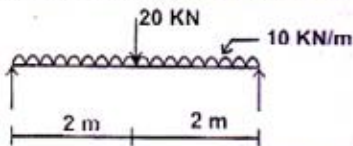
The corresponding Bending Moment Diagram is

(A)

10 KNm
10 KNm   30 KNm

(B)

40 KNm

(C)

40 KNm

(D)

20 KNm
20 KNm

11. What is the radius of Mohr's circle in case of bi-axial state of stress ?
   (A) Half the sum of the two principal stresses
   (B) Half the difference of the two principal stresses
   (C) Difference of the two principal stresses
   (D) Sum of the two principal stresses

12. What is the moment at A for a frame shown below :
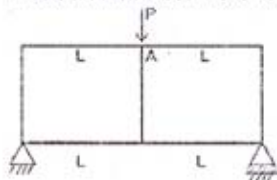
Each vertical member has very large Moment of Inertia

(A) $\dfrac{PL}{2}$

(B) $\dfrac{PL}{4}$

(C) $\dfrac{PL}{8}$

(D) $\dfrac{PL}{16}$

13. A structure has two degree of indeterminacy. The number of plastic hinges that would be formed at complete collapse is

(A) 0   (B) 1   (C) 2   (D) 3

14. For laminar flow between parallel plates separated by a distance 2h, head loss varies

(A) directly as h

(B) inversely as h

(C) directly as h^2

(D) Inversely as h^3

15. In Surveying, Offsets are

(A) lateral measurements made with respect to main survey line

(B) perpendiculars erected from chain lines

(C) taken to avoid unnecessary walking between stations

(D) measurements which are not made at right angles to the chain line

16. The true length of a line is known to be 200 m. When this is measured with a 20 m tape, the length is 200.8 m. The correct length of the 20 m tape is

(A) 19.92 m

(B) 19.98 m

(C) 20.04 m

(D) 20.08 m

17. Shear failure of soils takes place when

(A) the angle of obliquity is maximum

(B) maximum cohesion is reached in cohesive soils

(C) ϕ reaches its maximum value in cohesionless soils

(D) residual strength of the soil is exhausted

18. What is the process of utilizing one data link for transmission of a group of variables known as ?
    (A) Encoding
    (B) Decoding
    (C) Demultiplexing
    (D) Multiplexing

19. In order to increase the range of a voltmeter
    (A) a low resistance is connected in parallel
    (B) a low resistance is connected in series
    (C) a high resistance is connected in parallel
    (D) a high resistance is connected in series

20. The internal resistance of the milliammeter must be very low for
    (A) high accuracy
    (B) high sensitivity
    (C) minimum effect on the current in the circuit
    (D) maximum voltage drop across the meter

21. In order to have fast, steady and accurate responses, the meters should have
    (A) Critical damping
    (B) Under damping
    (C) a very high damping coefficient
    (D) No damping

22. In case of overdamping, the instrument will become
    (A) Oscillating
    (B) dead
    (C) fast and sensitive
    (D) slow and lethargic

23. In reference to Acid rain, what is correct statement.
    (A) The pH value is below 5.6
    (B) It occurs due to presence of sulphuric acid or nitric acid in the atmosphere
    (C) Maximum acid is due to strong Carbonic Acid
    (D) Acid rain affects ecosystem

24. In Global Warming, the major contribution is due to
    (A) Carbon emission
    (B) Agriculture
    (C) Deforestation
    (D) Industry

25. Which of the following mechanisms is NOT for removing particulate matter from gas streams.
    (A) Gravitational settling
    (B) Centrifugal impaction
    (C) Electrostatic precipitation
    (D) Burning the particulate

26. Which one of the following is NOT Biotic components of ecology.
    (A) Consumers
    (B) Producers
    (C) Decomposers
    (D) Climate

27. Match Col. X (Result) and Col. Y (Cause)

Col. X		Col. Y	
(P)	Water pollution	1.	Combustion of fossil fuel
(Q)	Air pollution	2.	Decaying of organic matter
(R)	Noise pollution	3.	Pesticides
(S)	Soil pollution	4.	High decibel

- (A) P-2, Q-1, R-4, S-3
- (B) P-1, Q-2, R-4, S-3
- (C) P-3, Q-1, R-2, S-4
- (D) P-1, Q-3, R-2, S-4

28. Part of the Computer where data and instructions are held is
- (A) Register Unit
- (B) Accumulator
- (C) Memory Unit
- (D) CPU

29. In a Computer, Assembler is
- (A) a program that places programs into memory and prepares them for execution
- (B) a program that automate the translation of assembly language into machine language
- (C) a program that accepts a program written in a high level language and produces an object program
- (D) is a program that appears to execute a source program if it were machine language

30. Which of the following is NOT a register in Computer ?
- (A) Accumulator
- (B) Stack Pointer
- (C) Program Counter
- (D) Buffer

31. Which Network protocol is used to send e-mail ?
- (A) FTP
- (B) SSH
- (C) POP 3
- (D) SMTP

32. The use of a cache in Computer system increases the
- (A) available memory space for the program
- (B) available memory space for the data
- (C) available speed of memory access
- (D) addressing range of CPU

33. A microprocessor has 24 address lines and 32 data lines. If it uses 10 bits of opcode, the size of its Memory Buffer Register is
- (A) 22 bits
- (B) 24 bits
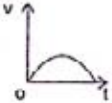- (C) 32 bits
- (D) 14 bits

34. In a microprocessor when a CPU is interrupted, it
- (A) Stops execution of instructions
- (B) Acknowledges interrupt and branches off subroutine
- (C) Acknowledges interrupt and continues
- (D) Acknowledges interrupt and waits for the next instruction from the interrupting device
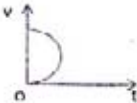
35. The MODEM is used with a personal computer to do which of the following ?
    (A) Convert from serial to parallel and vice versa
    (B) Convert signals between TTL and RS232 C standard and vice versa
    (C) Convert from digital to analog signals and vice versa
    (D) To convert the computer to a long distance communication link

36. The term digitization refers to
    (A) conversion of analogue into digital
    (B) conversion of digital into analogue
    (C) use of analogue form of electricity
    (D) a form of changing physical quantities

37. Which is NOT a Wireless Technology.
    (A) Blue Tooth   (B) A conventional telephone
    (C) Wi-fi   (D) Wi-Max

38. In an Engineering drawing, in double stroke Gothic lettering, which is correct.
    (A) Letters are drawn thin
    (B) The lettering template is used to draw the outline of letter
    (C) This is not preferred for ink drawings
    (D) This is having non-uniform line width

39. Match Col. X (Category) and Col. Y (Recommended Scale) in reference to an Engineering drawing.

Col. X		Col. Y	
P	Enlarging Scale	1.	1 : 500
Q	Full Scale	2.	10 : 1
R	Reducing Scale	3.	1 : 1
		4.	1 : 20

    (A) P – 4, Q – 1, R – 2, P – 3   (B) P – 2, Q – 3, R – 4, R – 1
    (C) P – 1, Q – 3, R – 2, P – 4   (D) P – 2, Q – 1, R – 4, Q – 3

40. If RF is 1/60000 and distance to be shown on drawing is 7.5 km, what is the length of line on drawing ?
    (A) 12.5 cm   (B) 8 cm   (C) 45 cm   (D) 10 cm

41. A parabola can be constructed on a drawing by the methods EXCEPT
    (A) Eccentricity Method   (B) Rectangle Method
    (C) Parallelogram Method   (D) Asymptote Method

42. Which of the Statements is NOT correct.
    (A) Isometric scale is used to draw isometric projection
    (B) Isometric scale is not used to draw isometric view
    (C) A square is seen as rectangle in isometric
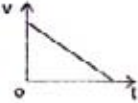   (D) A rectangle is seen as parallelogram in isometric

43. A particle moves along a circular path with constant speed. What is the nature of its acceleration ?
   (A) It is zero
   (B) It is Uniform
   (C) Its direction changes
   (D) Its magnitude changes

44. A body is at rest on the surface of the earth. Which of the following Statements is correct ?
   (A) No force is acting on the body
   (B) Only weight of the body acts on it
   (C) Net downward force is equal to net upward force
   (D) None of these is correct

45. The Specific Heat of the gas in an isothermal process is
   (A) Zero
   (B) Infinite
   (C) Negative
   (D) Remains constant

46. In a Simple Harmonic Oscillator, at the mean position
   (A) Kinetic Energy is minimum, Potential Energy is maximum
   (B) Both Kinetic and Potential Energies are maximum
   (C) Kinetic Energy is maximum, Potential Energy is minimum
   (D) Both Kinetic and Potential Energies are minimum

47. Mirage is a phenomenon due to
   (A) Reflection of light
   (B) Refraction of light
   (C) Total Internal reflection of light
   (D) Diffraction of light

48. Which of the following cannot be speed-time (v-t) graph of a body in motion ?
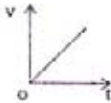
   (A)
   (B)
   (C)
   (D)

49. Avogadro's number, N_A means
   (A) number of protons in nucleus of an atom
   (B) number of atoms in one gram atom of an element
   (C) sum of the number of protons and the neutrons in the nucleus of an atom
   (D) number of protons or electrons in one gram of Sodium

50. Isotopes of the same element have
   (A) Same number of neutrons
   (B) Same atomic mass
   (C) Same number of protons
   (D) Different atomic number

51. In a reaction between Zinc and Iodine, Zinc Iodide is formed. What is being oxidised ?
   (A) Zinc ions
   (B) Iodide ions
   (C) Zinc Atom
   (D) Iodine

52. Which of the following halogens is the best oxidising agent ?
   (A) F_2
   (B) Cl_2
   (C) Br_2
   (D) I_2

53. Nitrogen is used to fill electric bulbs because it
   (A) is lighter than air
   (B) makes the bulb to give more light
   (C) does not support combustion
   (D) is non-toxic

54. Froth floatation process for the concentration of Ores is an illustration of the practical application of
   (A) Adsorption
   (B) Absorption
   (C) Coagulation
   (D) Sedimentation

55. The process of increasing fertility of soil by earthworms is known as
   (A) Organic farming
   (B) Vermicomposting
   (C) Eutrophication
   (D) Worm Casting

56. The most abundant element present in the plants is :
   (A) Iron
   (B) Carbon
   (C) Nitrogen
   (D) Manganese

57. An enzyme brings about
   (A) Decrease in reaction time
   (B) Increase in reaction time
   (C) Increase in activation energy
   (D) Reduction in activation energy

58. Kidneys are not only organs of excretion, their work is supplemented by
   (A) Liver
   (B) Heart
   (C) Large intestine
   (D) Skin

59. The longest cell in the body of an animal is
   (A) Osteocytes
   (B) Neuron
   (C) Chromatophores
   (D) Lymph corpuscles

60. Vitamin needed for blood coagulation is
   (A) E
   (B) D
   (C) K
   (D) C

61. The 1929 session of Indian National Congress is of significance in the history of the Freedom Movement because the
    (A) attainment of Self-Government was declared as the objective of the Congress
    (B) attainment of Poorna Swaraj was adopted as the goal of the Congress
    (C) Non-Cooperation Movement was launched
    (D) decision to participate in the Round Table Conference in London was taken

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

63. Match the following:
    P) C.R. Das   1. Bardoli Satyagraha
    Q) Vallabh Bhai Patel   2. Swarajist
    R) Abdul Ghaffar Khan   3. Khilafatist
    S) Maulana Azad   4. Khudai Khidmatgar
    (A) P-2, Q-1, R-4, S-3   (B) P-2, Q-4, R-1, S-3
    (C) P-4, Q-1, R-3, S-2   (D) P-2, Q-1, R-3, S-4

64. Money can be spent out of the Consolidated Fund of India
    (A) with the approval of the President
    (B) with the approval of the Parliament
    (C) with the approval of the CAG
    (D) with the approval of the above authorities

65. Which of the following is not a condition for becoming a Citizen of India ?
    (A) Birth   (B) Descent
    (C) Acquiring property   (D) Naturalisation

66. The Oath of Office is conducted to the President of India by
    (A) The Speaker of Lok Sabha   (B) The Chief Justice of India
    (C) The Vice-President of India (D) The Prime-Minister of India

67. Dew is caused when
    (A) humid air condenses on cool surface
    (B) the sky is overcast at night
    (C) the air is colder than the earth's surface
    (D) the wind is too dry to cause rainfall

68. Corbett National Park is in
    (A) Bihar   (B) Madhya Pradesh
    (C) Uttarakhand   (D) Himachal Pradesh

69. Which crop requires water-logging for its cultivation ?
    (A) Tea
    (B) Coffee
    (C) Rice
    (D) Mustard

70. One can open a Savings Account in India except in
    (A) A Nationalised Bank
    (B) A Cooperative Bank
    (C) a Private Bank
    (D) Reserve Bank of India

71. The Term "Inside Trading" is related to
    (A) Share Market
    (B) Horse racing
    (C) Taxation
    (D) Public expenditure

72. The term MOM was in news in relation to
    (A) CAG report
    (B) Asian Games
    (C) Mangalyaan
    (D) Election Commission

73. Merdeka Cup is associated with
    (A) International Table Tennis
    (B) Badminton
    (C) Hockey
    (D) International Football

74. Recently, referendum for independence was held in
    (A) Hongkong
    (B) Ireland
    (C) Scotland
    (D) Germany

75. Match Col. X (Sportsperson) and Col. Y (Sports) :

Col. X		Col. Y	
P.	Jitu Rai	1.	Badminton
Q.	Heena Sidhu	2.	Wrestling
R.	Jwala Gutta	3.	Shooting
S.	Yogeshwar Dutt		

    (A) P–3, Q–3, R–1, S–2
    (B) P–2, Q–3, R–1, S–2
    (C) P–2, Q–2, R–1, S–3
    (D) P–3, Q–1, R–1, S–2

76. Which of the following celebrities was recently appointed as "Brand Ambassador" of Telengana?
    (A) Deepika Pallikal
    (B) VVS Laxman
    (C) Saina Nehwal
    (D) Sania Mirza

77. EBOLA is a
    (A) virus disease confirmed in West Africa
    (B) name of Tsunami
    (C) Name of anti-terrorist operation in Arab Country
    (D) volcano in African Hills

78. BKS Iyengar, who died recently, was a world renowned _____
   (A) Yoga Guru   (B) Artist
   (C) Folk Singer   (D) Film Director

79. Which Country has recently launched "Gandhi Inspired Tourist Attraction Project"?
   (A) England   (B) South Africa
   (C) USA   (D) Japan

80. Who among the following has designed the logo and slogan of the "Swachch Bharat Abhiyan"
   (A) Neelam Bhattacharjee   (B) Anant and Bhagyashree
   (C) Uday Kumar   (D) Virman Kohli

81. The slogan of Asian Games Incheon 2014 was
   (A) Green, Clean and Friendship
   (B) We Cheer, We Share, We Win
   (C) Diversity Shines here
   (D) The Games of Your Life

82. "The "Helmand Province" of Afghanistan is famous for cultivation of
   (A) Tobacco   (B) Wheat
   (C) Cotton   (D) Opium

83. Main objective of newly announced "Pradhanmantri Jan-Dhan Yojna" is_____?
   (A) to provide a bank account to every poor
   (B) to provide a interest free loan to farmers
   (C) to provide financial assistance to tribal communication
   (D) to provide free medical facility to minority people

84. Consider the following pairs :
   1. Garba : Gujarat
   2. Mohiniattam : Odisha
   3. Yakshagana : Karnataka
   Which of the pairs given above is/are correctly matched ?
   (A) 1 only   (B) 2 and 3 only
   (C) 1 and 3 only   (D) 1, 2 and 3

85. Devdas and Parinita are Principal literary works by
    (A) Rabindra Nath Tagore
    (B) Sarat Chandra Chatterjee
    (C) Satyajit Ray
    (D) Munshi Premchand

86. The capacity of two pots is 120 litres and 56 litres respectively. The capacity of a container which can exactly measure the contents of the two pots is
    (A) 7500 cc
    (B) 7850 cc
    (C) 8000 cc
    (D) 9500 cc

87. A sum of ₹312 was divided among 60 boys and some girls in such a way that each boy gets ₹3.60 and each girl ₹2.40. The number of girls is
    (A) 35
    (B) 40
    (C) 60
    (D) 65

88. Some students planned a trip. The budget for food was ₹500. But, 5 of them failed to go and thus the cost of food for each member increased by ₹5. How many students attended the trip ?
    (A) 15
    (B) 20
    (C) 25
    (D) 30

89. In a class, there are two sections A and B. If 10 students of section B shift over to section A, the strength of A becomes three times the strength of B. But, if 10 students shift over from A to B, both A and B are equal in strength. How many students are there in sections A and B ?
    (A) 50 and 30
    (B) 45 and 15
    (C) 90 and 40
    (D) 80 and 40

90. 1250 articles were distributed among students of a class. Each student got twice as many articles as the number of students in that group. The number of students in the group was :
    (A) 25
    (B) 45
    (C) 50
    (D) 100

91. The average of marks of 28 students in Maths was 50. 8 students left the school and then the average increased by 5. What is the average of marks obtained by the students who left the school ?
    (A) 37.5
    (B) 42.5
    (C) 45
    (D) 50.5

92. Six persons went to a hotel for meals. Five of them spent ₹32 each on their meals while the 6th person spent ₹80 more than the average expenditure of all the six. Total money spent by all the persons is :
    (A) ₹192
    (B) ₹240
    (C) ₹288
    (D) ₹336

93. The sum of two numbers is 2490. If 6.5% of one number is equal to 8.5% of the other, the greater number is :

(A) 1079   (B) 1380

(C) 1411   (D) 1250

94. X is 40 years old and Y is 60 years old. How many years ago was the ratio of their ages 3 : 5 ?

(A) 5 years   (B) 10 years

(C) 20 years   (D) 37 years

95. In measuring the sides of a rectangle, errors of 5% and 3% in excess are made. The error percent in the calculated area is

(A) 8.35%   (B) 7.15%

(C) 8.15%   (D) 6.25%

96. If a frame is sold at ₹60, there is a loss of 15%. For a profit of 2%, the frame is to be sold at

(A) ₹70   (B) ₹72   (C) ₹75   (D) ₹85

97. On selling 100 pens, a shopkeeper gains price of 20 pens. His gain percent is

(A) 25%   (B) 20%   (C) 15%   (D) 12%

98. ₹680 is divided among A,B,C such that A gets $\frac{2}{3}$ of what B gets and B gets $\frac{1}{4}$ of what C gets. Then their shares are respectively

(A) ₹75, ₹325, ₹280   (B) ₹80, ₹120, ₹480

(C) ₹90, ₹210, ₹380   (D) ₹100, ₹200, ₹380

99. X, Y and Z start a business. X invests 3 times as much as Y invests and Y invests $\frac{2}{3}$rd of what Z invests. Then the ratio of capitals of X, Y, Z is

(A) 3 : 9 : 2   (B) 6 : 10 : 15

(C) 5 : 3 : 2   (D) 6 : 2 : 3

100. A man, a woman and a boy can together complete a piece of work in 3 days. If a man alone can do it in 6 days and a boy alone in 18 days, how long will a woman take to complete the work?

(A) 9 days   (B) 21 days

(C) 24 days   (D) 27 days

101. A tap can fill a cistern in 8 hours and another tap can empty it in 16 hours. If both the taps are open, the time taken to fill the tank will be

(A) 8 hrs.

(B) 10 hrs.

(C) 16 hrs.

(D) 24 hrs.

102. Two trains approach each other at 30 km/hr and 27 km/hr from two places 342 km apart. After how many hours will they meet ?

(A) 5 hrs.

(B) 6 hrs.

(C) 7 hrs.

(D) 12 hrs.

103. The speed of a 150 m long train is 50 kmph. How much time will it take to pass a 600 m long platform ?

(A) 50 sec

(B) 54 sec

(C) 60 sec

(D) 64 sec

104. In how many years, a sum will be thrice of it at simple interest @10% per annum ?

(A) 15 years

(B) 20 years

(C) 30 years

(D) 40 years

105. A sum of money amounts to ₹9680 in 2 years and ₹10648 in 3 years. The rate of interest per annum on compounded basis is

(A) 5%

(B) 10%

(C) 15%

(D) 20%

106. The perimeters of a circular field and a square field are equal. If the area of the square field is 12100 m², the area of the circular field will be

(A) 15500 m²

(B) 15400 m²

(C) 15200 m²

(D) 15300 m²

107. If the height of a cone is doubled, then the increase in its volume is

(A) 100%

(B) 200%

(C) 300%

(D) 400%

108. An angle is one-fifth of its supplement. The measure of the angle is
    (A) 15°   (B) 30°   (C) 75°   (D) 150°

109. The angle of elevation of a ladder leaning against a wall is 60° and the foot of the ladder is 7.5 m away from the wall. The length of the ladder is
    (A) 15 m
    (B) 14.86 m
    (C) 15.64 m
    (D) 15.8 m

110. Select the option to replace ? such that pattern in given number series is continued
    6, 13, 25, 51, 101, ?
    (A) 201   (B) 202   (C) 203   (D) 205

111. Select the option to replace ? in given alphabet series to continue the pattern.
    WFB, TGD, QHG, ?
    (A) NIJ   (B) NIK   (C) NJK   (D) OIK

112. In given letter series, some of the letters are missing which are given in that order in options. Select the correct option.
    _bcdbc_dcabd_bcdbc_dc_bd
    (A) aaaaa
    (B) ccccc
    (C) bbbbb
    (D) ddddd

113. Select the option that shows similar relation as between given words.
    Attack : Defend
    (A) Gradual : Abrupt
    (B) Sedate : Calm
    (C) Assign : Allot
    (D) House : Home

114. Select the option such that relation between words on either side is similar.
    Vigilant : Alert : : Viable : ?
    (A) Active
    (B) Hopeless
    (C) Feasible
    (D) Useful

115. Select the odd one out.
    (A) Iron
    (B) Nickel
   (C) Cobalt
    (D) Aluminium

116. D is taller than C and E. A is not as tall as E. C is taller than A. D is not as tall as B. Who among them is next to the tallest one ?
   (A) A   (B) D
   (C) B or D   (D) C

117. X walks 10 km towards North. From there, he walks 6 km towards South. Then, he walks 3 km towards East. How far and in which direction is he with reference to his starting point ?
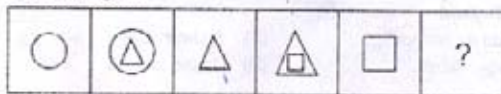   (A) 5 km West   (B) 5 km North-East
   (C) 7 km East   (D) 7 km West

Directions: (Question No. 118 & Question No. 119): Choose the Correct option for given classes.
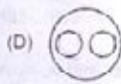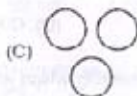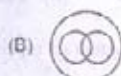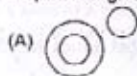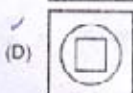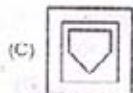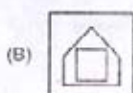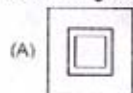

118. Men, Women, Human Beings

119. Doctors, Lawyers, Professionals

120. Select the option to replace ? in Problem Figure to continue the pattern.

Problem Figure

Answer Figures

121. Consider the following Statements.
    A real gas obeys perfect gas law at very
    1) High temperatures   2) High pressures
    3) Low pressures
    Which of these Statements is/are correct ?
    (A) 1 alone   (B) 1 and 3
    (C) 2 alone   (D) 3 alone

122. Which one of the following is correct ?
    The specific volume of water when heated from $0°C$
    (A) first increases and then decreases
    (B) first decreases and then increases
    (C) increases steadily
    (D) decreases steadily

123. Two blocks which are at different states are brought into contact with each
    other and allowed to reach a final state of thermal equilibrium. The final
    temperature attained is specified by the
    (A) Zeroth Law of Thermodynamics
    (B) First Law of Thermodynamics
    (C) 2nd Law of Thermodynamics
    (D) 3rd Law of Thermodynamics

124. A composite wall consists of two layers of different materials having
    conductivities K_1 and K_2. For equal thickness of the two layers, the
    equivalent thermal conductivity of the slab will be
    (A) $K_1 + K_2$ (B) $K_1 K_2$
    (C) $\dfrac{2 K_1 K_2}{K_1 + K_2}$ (D) $\dfrac{K_1 + K_2}{K_1 K_2}$

125. The presence of nitrogen in the products of combustion ensures that
    (A) Complete combustion of fuel takes place
    (B) Incomplete combustion of fuel takes place
    (C) dry products of combustion are analysed
    (D) air is used for the combustion

126. Which one of the following is the most significant property to be
    considered in the selection of material for the manufacture of locating pins
    and drill jig bushes used in jigs and fixtures ?
    (A) Wear Resistance   (B) Elasticity
    (C) Shear Strength   (D) Tensile Strength

127. What term is used to designate the direction of the predominant surface
    pattern produced by machining operation ? www.previouspapers.in
    (A) Roughness   (B) Lay
    (C) Waviness   (D) Cut off

128. Steady State Heat flow implies
    (A) negligible flow of heat
    (B) no difference of temperature between the bodies
    (C) constant heat flow rate i.e. heat flow rate independent of time
    (D) uniform rate in temperature rise of a body

129. What is the main shaft of an engine that controls the movement of piston ?
    (A) axle   (B) drive shaft
    (C) crank shaft   (D) cam shaft

130. For small and intricate castings, the sand grains should be
    (A) fine   (B) medium
    (C) coarse   (D) rounded

131. In Submerged Arc Welding, the arc is produced between
    (A) a bare metal electrode and work piece
    (B) a tungsten electrode and work piece
    (C) a carbon electrode and work piece
    (D) any type of electrode can be used

132. For Welding process, which is NOT correct.
    (A) Welding size depends on contact area of the face of Electrodes
    (B) Metal fusion takes place by raising the temperature to fusion point
    (C) In Pressure welding, the ends of metals pieces are joined in Elastic state
    (D) Gas flame is used as heat source in gas welding

133. In overhead welding position, which is correct option.
    (A) work pieces lie flat, welding is done from upper side of joint
    (B) welding is performed from the underside of joint
    (C) this position is most simple operation as compared to flat position
    (D) most suitable for Submerged Arc process

134. Soft iron is used in the manufacture of electromagnets because of its
    (A) high saturation magnetisation only
    (B) low retentivity only
    (C) low coercive field only
    (D) high saturation magnetisation, low retentivity and low coercive field

135. Which of the following is piezo-electric material ?
    (A) Quartz   (B) Silica Sand
    (C) Corundum   (D) Polystyrene

136. Which three-phase connection can be used in a transformer to introduce a phase difference of 30° between its output and corresponding input line voltages ?
    (A) Star-Delta
    (B) Star-Star
    (C) Delta-Delta
    (D) Delta-Zigzag

137. If two conductors carry current in the same direction
    (A) Conductors attract each other
    (B) Conductors are in resonance
    (C) Conductors repel each other
    (D) Voltage between two conductors increases

138. According to Joule's Law, heat energy produced by a Current I while flowing through a conductor of Resistance R for a Length L and Time T, is proportional to
    (A) T only
    (B) I^2RT
    (C) I^2RL
    (D) IRL^2

139. Reciprocal of magnetic permeability is
    (A) Conductance
    (B) Susceptance
    (C) Reluctivity
    (D) Permittivity

140. A material is said to have become superconductor when
    (A) its resistance becomes negative
    (B) its resistance becomes very small
    (C) its resistance decreases
    (D) its resistance becomes zero

141. When a given transformer is operating at its rated voltage with reduced frequency, its
    (A) Iron losses are reduced
    (B) Flux density remains unaffected
    (C) Core flux density is increased
    (D) Core flux density is reduced

142. The armature core of a d.c. machine is usually made of laminated sheets in order to
    (A) reduce hysteresis loss
    (B) reduce armature copper losses
    (C) reduce eddy current
    (D) increases its surface area for better dissipation of heat

143. To reduce air pollution due to smoke, _____ are used in thermal power plants.
    (A) reheaters
    (B) superheaters
    (C) induced draft fans
    (D) Electrostatic precipitators

144. Match Col. X (Instrument) with Col. Y (Use)

Col. X		Col. Y	
P	Transformer	1	Measures Current
Q	Rectifier	2.	Insulation Resistance
R	Ammeter	3.	Steps down Voltage
S	Megger meter	4.	Converts AC input to Unipolar output

(A) P-3, Q-4, R-1, S-2
(B) P-3, Q-1, R-4, S-2
(C) P-4, Q-3, R-2, S-1
(D) P-3, Q-1, R-2, S-4

145. FET is a device which has
(A) high input impedance and is current controlled
(B) low input impedance and is voltage controlled
(C) high input impedance and is voltage controlled
(D) low input impedance and is current controlled

146. Which gate corresponds to the action of parallel switches?
(A) AND gate
(B) OR gate
(C) NAND gate
(D) NOR gate

147. Which of the following contributes to harmonics distortion in amplifiers?
(A) Non-linearity in active device
(B) defective device
(C) presence of noise
(D) positive feedback

148. Select the Statement which is NOT correct.
(A) The magnetic amplifier is device for amplifying electrical signals
(B) A transistor is composed of semiconductor material
(C) p-n diode is based upon p-n junction
(D) Potentiometer controls audio signals

149. The main advantage of a bridge rectifier over full wave rectifier with centre tapped transformer is
(A) less ripple
(B) No transformer is needed
(C) peak inverse voltage of each diode is half
(D) PIV of each diode is double

150. Wheatstone bridge is used to measure
(A) low values of current and high values of current
(B) high values of current
(C) Low value of voltages
(D) resistance values

RRB SSE YELLOW(TSG001314) KEY

1.A	2.C	3.C	4.D	5.D	6.D	7.B	8.D	9	10.B
11.B	12	13.A	14.D	15.A	16.A	17.A	18.D	19.D	20.C
21.A	22.D	23.A,D	24.C	25.D	26.D	27.A	28.C	29.B	30.D
31.D	32.C	33.C	34.D	35.C	36.A	37.B	38.B	39.B	40.A
41.D	42.B	43.C	44.C	45.D	46.C	47.C	48.C	49.B	50.C
51.C	52.A	53.C	54.B	55.B	56.B	57.A	58.A	59.B	60.C
61.B	62.C	63.D	64.B	65.C	66.B	67.A	68.C	69.C	70.D
71.A	72.C	73.D	74.C	75.A	76.D	77.A	78.A	79.B	80.B
81.C	82.D	83.A	84.D	85.B	86.B	87.B	88.B	89.A	90.A
91.A	92.C	93.C	94.B	95.C	96.B	97.B	98.B	99.D	100.A
101.C	102.B	103.B	104.B	105.B	106.B	107.B	108.B	109.A	110.C
111.B	112.A	113.A	114.C	115.A	116.B	117.B	118.D	119.D	120.C
121.C	122.B	123.A	124.C	125.D	126.C	127.C	128.C	129.B	130.A
131.A	132.B	133.C	134.C	135.A	136.A	137.A	138.B	139.C	140.B
141.C	142.C	143.D	144.A	145.C	146.B	147.A	148.D	149.B	150.D