TNPSC
MOTOR VEHICLE INSPECTOR – 2009
MECHANICAL ENGINEERING

Time Allowed : 3 HOURS   Exam Date : 24.05.09, Series : B – MDQB   Maximum Marks : 300

1. Carburation is the process of
   A) breaking up the petrol into fine particles
   B) vaporising the petrol only
   C) mixing the petrol with air only
   D) breaking up, vaporising and mixing the petrol with air.

2. U_{235} is
   A) primary fuel
   B) secondary fuel
   C) ferrite material
   D) produced by the action of neutron and thorium.

3. The material lead is generally used in a nuclear power-plant for
   A) control rod   B) moderator
   C) shielding   D) none of these.

4. The condensation of moisture contained in air will take place at
   A) dew point temperature B) dry bulb temperature
   C) wet bulb temperature D) any of these.

5. Process of adding moisture to the air at constant dry bulb temperature is known as
   A) sensible heating   B) sensible cooling
   C) humidiflcation   D) dehumidiflcation.

6. In a refrigeration system, the type of compressor used is
   A) centrifugal   B) reciprocating
   C) rotary sliding vane   D) all of these.

7. Ammonia is
   A) non-inflammable
   B) non-toxic
   C) toxic and non-inflammable
   D) highly toxic and inflammable.

8. Which of the following components is common between vapour compression and vapour absorption systems ?

A) Rectifier   B) Condenser
C) Generator   D) Absorber

9. A system in which there is no transfer of mass and energy across the boundary of the system is called
   A) closed system   B) an open system
   C) an isolated system   D) none of these

10. Which one of the following is a reversible process ?
    A) Isothermal and constant volume process
    B) Adiabatic process
    C) Throttling process
    D) Constant pressure process.

11. Which of the following is temporary memory ?
    A) ROM   B) RAM
    C) Either of these   D) None of these

12. A micro-computer is
    A) the smallest computer B) designed for single user
    C) designed for multiple users D) both (A) and (B)

13. Machine language
    A) differs from computer to computer
    B) is the only language which computer can understand
    C) both (A) and (B)
    D) none of these.

14. Modern computers process
    A) binary numbers   B) hexadecimal numbers
    C) decimal numbers   D) digits and strings

15. Strorage of Ik means that it has .... numbers of storage locations.
    A) 964   B) 1000   C) 1024   D) 1032

16. In a computer system which of the following is most troublesome ?
    A) CRT   B) Floppy disk
    C) Printer   D) CPU

17. The sequence of instructions that tell the computer how to process the data is
    A) address   B) program
    C) flow-chart   D) control unit

1 C   2 .... A   3 C   4 .... A   5 C   6 .... B   7 C   8 .... B   9 C   10 .... B
11 .... B   12 .... D   13 C   14 .... A   15 C   16 .... B   17 .... B

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18. The binary equivalent of decimal number 13 is
    A) 1001　　 B) 1100　 C) 1010　 D) 1101

19. Which of the following is a volatile memory ?
    A) Flip-flop　　　　　 B) Magnetic disc
    C) Magnetic core　　　 D) Drum

20. In a decimal digital computer, the number 127 is stored as
    A) 1111111　　　　　 B) 000100100111
    C) 10001　　　　　　 D) 11000111

21. The quality control is a
    A) corrective function
    B) preventive function
    C) corrective and preventive function
    D) none of these

22. The coining of the term 'therblig' was done by
    A) F.W. Taylor　　　　 B) Lilian Gilbreth
    C) Frank Gilbreth　　　 D) A.S.M.E.

23. Allowances in case of work study are
    A) personal allowance　 B) delay allowance
    C) contingency allowance D) all of these

24. The primary aim of master scheduling is to
    A) meet sales requirements
    B) deliver commitments
    C) arrange for the operation of the plant with maximum effectiveness
    D) all of these

25. Therblig in micromotion study is described by
    A) an event
    B) standard symbol and colour
    C) an activity
    D) none of these

26. .... is used to find per cent idle time for men or machines.
    A) Work study　　　　 B) Time study
    C) Method study　　　 D) Work sampling

27. .... is the process of production in which machinery is used for small time for one job and is suitable for different types of production
    A) Process production
    B) Intermittent production
    C) Continuous production
    D) Flow line production

28. Work study involves
    A) only method study
    B) only work measurement
    C) method study and, work measurement
    D) only motion study

29. The symbol → indicates
    A) operation　　　　　 B) transportation
    C) delay　　　　　　　 D) storage

30. The time standards may be useful in
    A) plant layout
    B) budgetary control
    C) design of wage-incentive plans
    D) none of these

31. Which moulding process is preferable for large and heavy casting ?
    A) Green sand moulding　 B) skin dried moulding
    C) pit moulding　　　　 D) shell moulding

32. Two non-consumable electrodes are used in
    A) Atomic hydrogen welding　 B) TIG welding
    C) MIG welding　　　　 D) Submerged arc welding

33. Which forming process does not involve rotation of workpiece ?
    A) Spinning　　　　　 B) Thread rolling
    C) Upsetting　　　　　 D) Ring rolling

34. The advantage of cold forming is
    A) grain refinement takes place
    B) strength and hardness increase
    C) no consequent heat treatment is needed
    D) force required is relatively small

35. For machining ceramics, glasses and plastics which method is not applicable ?
    A) AJM　　 B) LBM　　 C) EDM D)　 USM

36. In which of the following gear cutting processes indexing is required ?
    A) Robbing　　　　　 B) Stamping
    C) End milling　　　　 D) Broaching

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18 .... D　 19 .... A　 20 .... A　 21 .... A　 22 .... C　 23 .... D　 24 .... D　 25 .... B　 26 .... D　 27 .... B

28 .... C　 29 .... B　 30 .... C　 31 .... C　 32 .... A　 33 .... C　 34 .... B　 35 .... B　 36 .... D

37. Which drill is used for deep hole drilling ?
    A) Heavy duty drill   B) Jobber's drill
    C) Oil hole drill   D) Straight fluted drill

38. The gear in which tooth thickness changes along its length is
    A) Helical gear   B) Bevel gear
    C) Spiral gear   D) Spur gear

39. The process of removing metal by a cutter which is rotated in a direction opposite to the feed of the workpiece is known as
    A) upmilling or conventional milling
    B) downmilling or climb milling
    C) face milling
    D) end milling

40. Broaching is used for machining
    A) internal and external surfaces
    B) round or irregular shaped holes
    C) teeth of a gear or spline
    D) all of these

41. Which one of the following is an irreversible process ?
    A) Isothermal and constant volume process
    B) Adiabatic process
    C) Isothermal process
    D) Throttling process

42. If the pressure of a gas is expressed in bar, then one bar is equal to
    A) 10^3N/m^2 B) 10^4N/m^2
    C) 10^5N/m^2 D) 10^6N/m^2

43. Gases have
    A) one specific heat   B) two specific heats
    C) three specific heats   D) no specific heat

44. For the same compression ratio the efficiency of diesel cycle as compared to Otto cycle is
    A) less   B) more
    C) equal   D) none of these

45. The compression ratio for diesel engine is
    A) 3 to 6   B) 5 to 8
    C) 15 to 20   D) 20 to 30

46. In I.C. engines, the power developed inside the cylinder is known as
    A) brake horsepower   B) indicated horsepower
    C) pumping power   D) none of these

47. The power available at the shaft of an I.C. engine is known as
    A) brake horsepower   B) indicated horsepower
    C) net indicated horsepower D) pumping power

48. At the same speed, the number of power strokes given by a two-stroke cycle engine as compared to a four-stroke cycle engine is
    A) half   B) same
    C) double   D) four times

49. For same power, the floor area occupied by two-stroke cycle engine as compared to four-stroke cycle engine is
    A) heavier   B) less
    C) same   D) none of these

50. Flywheel used in two-stroke cycle engine as compared to four-stroke cycle engine is
    A) heavier   B) ligher
    C) same in weight   D) none of these.

51. The process of restoring the cutting face of a grinding wheel is known as
    A) truing   B) dressing
    C) facing   D) grading

52. Process of removing metal by feeding the work past a rotating multipoint cutter is known as
    A) grinding   B) milling
    C) broaching   D) none of these

53. The table can be tilted in a vertical plane by providing a swivel arrangement at the knee in
    A) plain milling machine
    B) universal milling machine
    C) omniversal milling machine
    D) planetary milling machine

54. Process of shaping thin metal sheets by pressing them against a form is known as
    A) spinning   B) upsetting
    C) drawing down   D) reaming

55. Aluminium is the best metal for making patterns because it is
    A) light in weight   B) easy to work
    C) corrosion resistant   D) all of these

56. Draft allowance on casting is generally
    A) 1 to 2 mm/m   B) 2 to 5 mm/m
    C) 5 to 10 mm/m   D) 10 to 15 mm/m

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37 .... D   38 .... B   39 .... A   40 .... D   41 .... D   42 C   43 .... B   44 .... B   45 .... B   46 .... B
47 .... A   48 .... B   49 .... B   50 .... B   51 .... A   52 .... B   53 C   54 .... B   55 .... D   56 .... A

57. Property of sand due to which the sand grains stick together is known as
A) permeability
B) cohesiveness
C) adhesiveness
D) collapsibility.

58. In which operation tool does not rotate ?
A) Planing
B) Grinding
C) Drilling
D) Milling

59. For high speed, which wheel is suitable ?
A) Resinoid and rubber bonded wheel
B) Silicate bonded wheel
C) Shellac bonded wheel
D) Vitrified wheel

60. Which of the following is not the part of lathe and milling machine ?
A) Saddle
B) Quick return spring
C) Arbor
D) Spindle

61. The direction of rotation of a 3 ϕ induction motor can be reversed by
A) changing the starter
B) interchanging any two supply leads
C) changing the rotor resistance
D) none of these

62. The specific gravity of the electrolyte used in the lead-acid battery in the fully charged condition is
A) 1.21   B) 1.8   C) 1.18   D) 2

63. The electrolyte used in the lead-acid battery is
A) dilute nitric acid
B) concentrated nitric acid
C) dilute sulphuric acid
D) concentrated sulphuric acid.

64. The term 1C is used in electronics to denote
A) industrial control
B) integrated circuit
C) internal circuit
D) none of these

65. Due to which of the following reasons is a transformer not used in the D.C. line ?
A) D.C. transformers are costly
B) Faraday's law is not valid as the rate of change of flux is zero
C) Losses in D.C. circuit are high
D) Electric shock is heavy in D.C.

66. A step-up transformer, increases which of the following parameters ?
A) Power
B) Frequency
C) Current
D) Voltage.

67. For which application is a D.C. motor preferred over an A.C. motor ?
A) High Speed Operation
B) Low Speed Operation
C) Fixed Speed Operation
D) Variable Speed Operation

68. A body having similar properties throughout its volume is said to be
A) homogeneous
B) isotropic
C) isentropic
D) anisotropic

69. Modulus of rigidity is defined as the ratio of
A) longitudinal stress to longitudinal strain
B) shear stress to shear strain
C) stress to strain
D) volumetric stress to volumetric strain

70. In an elastic material, stress is
A) not proportional to strain
B) unrelated to strain
C) directly proportional to strain
D) sometimes proportional to strain

71. Thermal efficiency of a two-stroke cycle engine as compared to four-stroke cycle engine is
A) more
B) less
C) same
D) none of these

72. The ignition takes place due to heat produced in the engine cylinder at the end of compression in
A) petrol engine
B) diesel engine
C) steam engine
D) none of these

73. Which is not related to C.I. engines ?
A) Fuel pump
B) Fuel injector
C) Carburettor
D) Fly wheel

74. In diesel engines, the governor controls
A) fuel volume
B) fuel temperature
C) fuel flow rate
D) fuel pressure

75. Otto cycle is a theoretical cycle on which
A) only petrol engine runs
B) only diesel engine runs
C) only gas engine runs
D) petrol and gas engines run

57......... B 58........ A 59........ A 60........ C 61..........B 62 .... A 63........ C 64........ B 65 .... B 66 .... D
67.........D 68........ A 69........ B 70 .... C 71..........B 72 .... B 73........ C 74........ C 75 .... D

76. Compression ratio for petrol engine is
    A) 3 to 6
    B) 5 to 8
    C) 15 to 20
    D) 20 to 30

77. The efficiency of diesel cycle increases with
    A) increase in cut-off
    B) decrease in cut-off
    C) constant cut-off
    D) none of these

78. Steam turbines are used for
    A) electric generation
    B) direct drive of fans, compressors and pumps
    C) large marine propulsion
    D) all of these

79. Every computer system contains two parts namely
    A) CPU and flow-chart
    B) flow-chart and keyboard
    C) hardware and software
    D) none of these

80. All the basic arithmetic operations and logical comparisons were done through
    A) input unit
    B) output unit
    C) arithmetic logic unit
    D) none of these

81. Coefficient of velocity for Bourdon's mouthpiece running full is
    A) 1.0
    B) 0.611
    C) 0.707
    D) 0.855

82. The ratio of area of jet at vena contracta to the area of the orifice is known as the coefficient of
    A) discharge
    B) contraction
    C) velocity
    D) none of these

83. In an orifice, the maximum magnitude is of hydraulic coefficient
    A) C_v
    B) C_c
    C) C_d
    D) all are equal

84. The slip in the reciprocating pump will be negative if
    A) $Q_{th} > Q_{act}$
    B) $Q_{th} < 9_{act}$
    C) $Q_{th} = Q_{act}$
    D) none of these

85. A casing of spiral type in which area of flow increases gradually is known as
    A) vertex casing
    B) volute casing
    C) casing with guide blades
    D) none of these

86. The main advantage of the draft tube is to convert
    A) pressure energy into kinetic energy
    B) kinetic energy into pressure energy
    C) pressure energy into electrical energy
    D) none of these

87. The net head on a turbine is 100 m; then turbine would be
    A) Kaplan turbine
    B) Francis turbine
    C) Pelton turbine
    D) Steam turbine

88. Kaplan turbine is a/an
    A) reaction turbine
    B) impulse turbine
    C) radial flow turbine
    D) none of these

89. The ratio of the power developed by the runner of a turbine to the power supplied by the water at the inlet of turbine is known as
    A) hydraulic efficiency
    B) mechanical efficiency
    C) overall efficiency
    D) none of these

90. The vertical distance between the total energy line and hydraulic gradient line is equal to
    A) pressure head
    B) datum head
    C) velocity head
    D) piezometric head

91. Time study is carried out to determine the time required to complete job by
    A) slow worker
    B) fast worker
    C) average worker
    D) apprentice

92. In A-B-C analysis, which class of items are generally large in number ?
    A) A
    B) B
    C) C
    D) none of these

93. Time study is used to
    A) provide a basis for setting piece price or incentive wages
    B) determine standard costs
    C) determine the number of machines a person may run
    D) all of these

94. Main objective of scientific layout is to
    A) minimise production delay
    B) use maximum floor area
    C) produce better quality of product
    D) all of these

76 .... B	77 .... B	78 .... D	79 C	80 C		81 C	82 .... B	83 C	84 .... D	85 .... B
86 .... B	87 .... B	88 .... A	89 .... A	90 C		91 C	92 C	93 .... D	94 .... D	

95. Basic tool in work study is
    A) stopwatch B) planning chart
    C) process chart D) bar chart

96. A-B-C analysis is used in
    A) CPM B) PERT
    C) inventory control D) all of these

97. A good organisation requires
    A) that responsibilities should be clearly defined
    B) well established and known system of communication
    C) clear distribution between line and staff operation and control
    D) all of these

98. F.W. Taylor introduced a system of working, known as
    A) line organisation
    B) line and staff organisation
    C) effective organisation
    D) functional organisation

99. Break-even analysis consists of
    A) fixed expense B) variable cost
    C) sales revenue D) all of these

100. Work study is used in
    A) industries B) hospital
    C) transport D) all of these

101. Gantt chart is generally used in
    A) despatch B) routing
    C) scheduling D) coordinating

102. The other name for line layout is known as
    A) Process layout B) product layout
    C) combination layout D) fixed layout

103. The time recorded by a work study - man on an operation is known as
    A) observed time B) normal time
    C) standard time D) none of these

104. Which one of the following is not a human cause for accidents ?
    A) Carelessness B) Defective device
    C) Fatigue D) All of these

105. Reason for low productivity is
    A) bad planning of work
    B) poor process planning
    C) poor working environment
    D) all of these

106. Chart used in work study is
    A) man-machine chart B) flow process chart
    C) operation process chart D) All of these.

107. A-B-C analysis deals with
    A) basic technique of material management
    B) controlling inventory costs money
    C) both (A) and (B)
    D) none of these

108. Break-even analysis is a/an
    A) long term analysis B) short term analysis
    C) average term analysis D) any of these

109. If the sales revenue is more than total cost then break-even analysis shows
    A) profit B) loss
    C) no profit, no loss D) none of these

110. Product layout is preferred where
    A) Product is standardised
    B) Product is manufactured in large quantities
    C) One type of product is manufactured
    D) all of these

111. The Young's modulus of a material is equal to
    A) stress/strain, within the yield point
    B) strain/stress, within the elastic limit
    C) stress/strain, within the elastic limit
    D) none of these

112. Normal strain is defined as
    A) rate of change of length
    B) strain that normally occurs
    C) strain that is normal to shear strain
    D) deformation normal to the force

113. The relation between modulus of elasticity E, modulus of rigidity G and Poisson's ratio μ is
    A) $E = G(\mu + 1)$ B) $E = G(\mu - 1)$
    C) $E = 2G(\mu + 1)$ D) $E = 2G(\mu - 1)$

114. The relationship between modulus of elasticity E and bulk modulus K is
    A) $K\left(1 - \dfrac{2}{m}\right)$ B) $2K\left(1 + \dfrac{2}{m}\right)$

    C) $3K\left(1 - \dfrac{2}{m}\right)$ D) $3K\left(1 + \dfrac{2}{m}\right)$

    where Poisson's ratio is $\dfrac{1}{m}$

| 95 ..... A | 96 ..... C | 97 ..... D | 98 ..... D | 99 ..... D | 100 ..... D | 101 ..... C | 102 ..... B | 103 ..... A | 104 ..... B |
| 105 ..... D | 106 ..... B | 107 ..... C | 108 ..... B | 109 ..... C | 110 ..... D | 111 ..... C | 112 ..... A | 113 ..... C | 114 ..... C |

115. A bar of copper and steel forms a composite system, which is heated to a temperature at 45°C. The stress in the copper bar will be
A) tensile
B) compressive
C) shear stress
D) none of these

116. Rate of change of bending moment is equal to
A) shear force
B) slope
C) deflection
D) none of these

117. Simple bending equation is
A) $\dfrac{M}{I} = \dfrac{R}{E} = \dfrac{f}{y}$
B) $\dfrac{M}{I} = \dfrac{E}{R} = \dfrac{f}{y}$
C) $\dfrac{M}{R} = \dfrac{1}{E} = \dfrac{f}{y}$
D) none of these

118. The section modulus of a circular section about an axis through its C.G. is
A) $\dfrac{\pi d^2}{16}$
B) $\dfrac{\pi d^3}{32}$
C) $\dfrac{\pi d^3}{64}$
D) $\dfrac{\pi d^2}{64}$

119. The stiffness of a helical spring is expressed as
A) load per unit area
B) load per unit deflection
C) load per unit length
D) none of these

120. Stiffness of a closed coiled helical spring in terms of write diameter d, modulus of rigidity G, number of turns n and mean coil radius R is given by
A) $\dfrac{Gd^4}{16R^3 n}$
B) $\dfrac{Gd^4}{32R^3}$
C) $\dfrac{Gd^4}{64R^3 n}$
D) $\dfrac{Gd^4}{128R^3 n}$

121. In operation process chart, the number of symbols used is only
A) one
B) two
C) three
D) four

122. Layout suitable for automobile manufacturing unit is
A) process layout
B) product layout
C) combination layout
D) all of these

123. Product layout
A) requires less floor area
B) lowers overall manufacturing time
C) utilises machine and labour better
D) all of these

124. A product layout is generally preferred for
A) batch production
B) continuous type of production
C) effective machine utilization ratio
D) all of these.

125. Product layout is generally suggested for
A) jobbing work
B) batch production
C) continuous production
D) all of these

126. Process prescribing the sequence of operation to be followed, is known as
A) dispatching
B) routing
C) scheduling
D) loading

127. Process which determines the programme for the operations, is known as
A) dispatching
B) routing
C) scheduling
D) loading

128. Process, which is concerned with starting of the process is known as
A) dispatching
B) routing
C) scheduling
D) loading

129. In mass production
A) the unit cost is low
B) the operations are capital-intensive
C) both (A) and (B)
D) none of these

130. Time study is done by means of
A) stopwatch
B) time study sheet
C) planning chart
D) both (A) and (B)

131. Which one of the following is not the property of a thermodynamic system ?
A) Heat
B) Enthalpy
C) Entropy
D) Pressure

132. Heat and work are
A) properties of a system
B) point functions
C) path functions
D) none of these

133. The time taken by fuel after injection to reach upto auto-ignition temperature is known as
A) injection lag
B) overlap
C) ignition lag
D) auto-ignition

134. If the cut-off is decreased, the efficiency of diesel cycle
A) increases
B) decreases
C) is same
D) none of these

135. Magneto-ignition system is used in
A) S.I. engines
B) C.I. engines
C) steam engines
D) nuclear power plant

115 .... B	116 .... A	117 .... B	118 .... B	119 .... B
120 C	121 .... B	122 .... B	123 .... D	124 .... B
125 C	126 .... B	127 C	128 .... A	129 C
130 .... D	131 .... A	132 C	133 C	134 .... A
135 .... A				

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136. Heat is rejected from the working fluid in case of diesel cycle at
    A) constant volume
    B) constant pressure
    C) constant entropy
    D) none of these

137. In case of diesel cycle, expansion ratio is
    A) more than compression ratio
    B) less than compression ratio
    C) equal to compression ratio
    D) none of these

138. The steam turbines are
    A) only impulse turbine
    B) only reaction turbine
    C) impulse or reaction turbine
    D) none of these

139. A condenser in a steam power plant is used to
    A) reduce back pressure of the steam
    B) supply hot water to the boiler
    C) supply pure feed water to the boiler
    D) all of these

140. Governing of steam engines means
    A) to keep the maximum pressure constant
    B) to keep the speed constant at all operating loads
    C) to keep the power developed constant
    D) all of these

141. Liquids or fluids
    A) have no shape
    B) cannot be compressed
    C) both (A) and (B)
    D) none of these

142. Standard atmospheric pressure in terms of water column is
    A) 9.81 m
    B) 10.33 m
    C) 10.95 m
    D) 12.00 m

143. A venturimeter is used for measuring
    A) velocity head
    B) pressure head
    C) piezometric head
    D) flow rate

144. The coefficient of discharge, C_d of a venturimeter takes into account
    A) diameter ratio
    B) non-uniform velocity distribution
    C) effect of roughness of surface and Reynolds number
    D) all of these

145. When a mouthpiece and orifice having the same diameter and same head, then the discharge through the mouthpiece as compared to orifice is
    A) more
    B) less
    C) same
    D) none of these

146. Coefficient of contraction for an external cylindrical mouthpiece will be
    A) 1.0
    B) 0.611
    C) 0.707
    D) 0.855

147. Work saved by fitting air vessel in a double-acting reciprocating pump is
    A) 35%
    B) 39.2%
    C) 75.5%
    D) 84.8%

148. Percentage slip of a reciprocating pump is equal to
    A) $(1 + C_d) \times 100$
    B) $(1 - C_d) \times 100$
    C) $\left(\dfrac{1}{1 - C_d}\right) \times 100$
    D) $\left(\dfrac{1}{1 + C_d}\right) \times 100$

149. Air vessel is used in case of a reciprocating pump for making velocity in the suction or delivery pipe
    A) maximum
    B) minimum
    C) uniform
    D) none of these

150. The coefficient of contraction of sharp edged orifice is
    A) 1.0
    B) 0.98
    C) 0.85
    D) 0.61

151. Neutral flame is obtained by supplying
    A) equal volumes of oxygen and acetylene
    B) more volume of acetylene and less volume of oxygen
    C) more volume of oxygen and less volume of acetylene
    D) none of these

152. Oxygen cutting process is used to cut
    A) mild steel
    B) aluminium
    C) copper
    D) all of these

153. A pair of tumbler gears is used in
    A) capstan lathe
    B) centre lathe
    C) shaper machine
    D) all of these

154. Height of the centre measured from the bed of the lathe as compared to swing diameter over the bed is
    A) half
    B) double
    C) same
    D) four times

155. Drilling machine used for mass production is
    A) gang drilling machine
    B) multi-spindle drilling machine
    C) deep hole drilling machine
    D) radial drilling machine.

156. Material used for making drill is
    A) high speed steel
    B) carbon steel
    C) carbide tipped
    D) all of these

136 .... A	137 .... B	138 C	139 C	140 .... B
146 .... A	147 .... B	148 .... B	149 C	150 .... D
156 .... A				
141 C	142 .... B	143 .... D	144 .... D	145 .... A
151 .... A	152 .... A	153 .... B	154 .... A	155 .... B

157. Operation of producing large holes by removing metal aldng the circumference of a hole is known as
A) spot facing   B) countersinking
C) lapping   D) trepanning

158. Shaper is used for machining
A) vertical surface   B) horizontal surface
C) angular surface   D) irregular surface

159. A shaper can cut
A) gears   B) keyways
C) grooves   D) all of these

160. Grinding used to produce a straight or tapered surface on a workpiece is
A) internal cylindrical grinding
B) external cylindrical grinding
C) surface grinding
D) form grinding

161. A cutting operation in which no feed is given, is
A) taper turning   B) end milling
C) broaching   D) grinding

162. Which cutting operation cannot be performed on lathe ?
A) Keyway on a shaft
B) Eccentric hole in a small square plate
C) A square hole in a small square plate
D) Straight tooth spur gear

163. Non-cutting process that can be performed on lathe is
A) drawing   B) spinning
C) extrusion   D) welding

164. Column is the part of which of the following machines ?
A) Shaper and drilling   B) Drilling and grinding
C) Drilling and milling   D) Drilling and lathe

165. Knee is the part of which of the following machines ?
A) Lathe and shaper   B) Shaper and milling
C) Milling and drilling   D) Drilling and grinding

166. Which operation is not performed on Lathe ?
A) Milling   B) Drilling
C) Drawing   D) Grinding

167. For holding a workpiece securely on the machine table one can use a/an
A) fixture   B) jig
C) angle plate   D) plate with holes

168. The unit for current is
A) volt   B) ampere
C) coulomb   D) ohm

169. The main difference between primary cell and secondary cell is
A) a primary cell can be recharged
B) a secondary cell can be recharged and a primary cell cannot
C) a primary cell has an unlimited life and secondary cell does not
D) a primary cell produces D.C. voltage and a secondary cell produces A.C. voltage

170. The minimum number of wattmeters required to measure 3-phase 3-wire balanced or unbalanced power is
A) 1   B) 2   C) 3   D) 4

171. Study used to find a simpler, easier and better way of performing a job is known as
A) time study   B) motion study
C) motion and time study D) method study

172. Shortage of the materials, spare parts, cutting tools etc. results in
A) high productivity   B) low productivity
C) same productivity   D) none of these

173. The fundamental management principle used for inventory management problem is
A) SQC   B) ABC analysis
C) QSC   D) EPG analysis

174. PERT has
A) one-time estimate   B) two-time estimate
C) three-time estimate   D) no time estimate

175. Technique of work measurement is
A) time study
B) work sampling
C) synthesis of predetermined time standards
D) all of these

176. CPM terminology employs word like
A) events   B) stack
C) network diagram   D) arrow diagram

177. According to Muther, basic principle of best layout is
A) principle of flow
B) principle of flexibility
C) principle of overall integration
D) all of these

157.........D	158......... *	159........D	160.........B	161..........C
162 C	163........ B	164 .... A	165........ C	166 .... A
167.........C	168 ....B	169.........B	170......... B	171 ....D
172 .... B	173........ B	174 C	175........ C	176 C
177 ....D				

178. Break-even point shows that
    A) variable cost is equal to fixed cost
    B) sales revenue is greater than total cost
    C) sales revenue is less than total cost
    D) sales revenue is equal to total cost

179. Bar charts are employed for
    A) larger works   B) minor projects
    C) dam construction   D) all of these

180. The economic order quality in inventory control refers to
    A) optimum lot size
    B) lowest level of inventory
    C) lot corresponding to break-even point
    D) lot most economical to process

181. The continuity equation is based on the law of
    A) conservation of energy
    B) conservation of momentum
    C) conservation of mass
    D) none of these

182. A floating body displaces a volume of liquid equal to
    A) its own volume   B) its own weight
    C) its submerged weight D) none of these

183. The point at which the buoyant force is supposed to act is known as
    A) centre of pressure   B) centre of gravity
    C) centre of buoyancy   D) meta-centre

184. If density of a fluid changes during its flow then flow is known as
    A) compressible   B) uniform
    C) steady   D) incompressible

185. Absolute pressure at any point is equal to
    A) gauge pressure - atmospheric pressure
    B) gauge pressure - vacuum pressure
    C) gauge pressure + atmospheric pressure
    D) none of these

186. Specific weight of water is equal to
    A) $1000 kg/m^3$ B) $1000 N/m^3$
    C) $9810 N/m^3$ D) $98100 N/m^3$

187. The ratio of the specific weight of the liquid to the specific weight of a standard fluid is known as
    A) specific volume   B) weight density
    C) specific gravity   D) viscosity

188. The Bernoulli's equation is based on the principle of conservation of
    A) mass   B) energy
    C) momentum   D) all of these

189. Cavitation in turbine causes
    A) damage to blades   B) noise and vibrations
    C) fall in efficiency D) all of these

190. The specific speed of a Francis turbine is in the range
    A) 10 to 35   B) 35 to 60
    C) 60 to 400   D) 300 to 1200

191. In case of thin walled cylinders the ratio of hoop stress to longitudinal stress is
    A) $\dfrac{1}{2}$ B) $\dfrac{1}{4}$ C) 2   D) 4

192. The section modulus of a rectangular section is equal to
    A) $\dfrac{bd^3}{12}$ B) $\dfrac{bd^3}{6}$ C) $\dfrac{bd^2}{12}$ D) $\dfrac{bd^2}{6}$

193. If the S.F. diagram between two points is inclined, then B.M. diagram will be
    A) parabolic   B) cubic
    C) inclined straight line D) horizontal straight line

194. The, rate of change of bending moment is equal to
    A) S.F.   B) deflection
    C) curvature   D) none of these

195. When a bar is subjected to an axial tensile load, then the lateral strain will be
    A) tensile   B) compressive
    C) shear   D) none of these

196. When a thin cylinder due to internal fluid pressure fails along the longitudinal section, the stress produced is known as
    A) longitudinal stress B) hoop stress
    C) bending stress   D) shear stress

197. Poisson's ratio is the ratio of
    A) lateral strain to longitudinal strain
    B) longitudinal strain to lateral strain.
    C) change in volume to original volume
    D) none of these

198. The phenomenon due to which the strain of a material varies under constant Stress is known as
    A) Boerschinger   B) Creep
    C) Hysteresis   D) None of these

199. In the case of isothermal process, change of internal energy is
    A) positive   B) negative
    C) zero   D) none of these

200. Constant volume cycle is also known as
    A) Carnot cycle   B) Otto cycle
    C) Diesel cycle   D) None of these

178.........D	179.........B	180.........A	181.........C	182..........A
183.........C	184.........A	185.........C	186.........C	187.........C
188.........B	189.........D	190.........C	191.........A	192..........D
193.........A	194.........A	195.........B	196.........A	197.........A
198.........B	199.........C	200.........B		