PREVIOUS YEAR PAPER

# DSSSB Technical Assistant (Mechanical) 2021 — 8 September 2021, Shift 3

DSSSB Other Posts · 8 September 2021 · Shift 3

160 of the paper's 200 questions · +1 for a correct answer, −0.25 for a wrong one · 120 minutes

Left out of the original paper: 40 (any question that needs a figure, a symbol or formatting we cannot show, or whose text did not read back cleanly from the booklet).

Questions from the Delhi Subordinate Services Selection Board's paper of 8 September 2021, Shift 3. Each question is followed by its answer, and the answer key is repeated on the last page.

Take it as a timed practice test: exambharo.com/dsssb-other-posts/previous-year-papers/dsssb-other-posts-2021-technical-assistant-mechanical-8-sep-shift-3/

## General Awareness

1. _____ was constructed by Mewar king Rana Kumbha in 1448 to commemorate his victory over the combined armies of Malwa and Gujarat led by Mahmud Khilji.

(a) Vijay Stambha
(b) Charminar
(c) Jaisalmer Fort
(d) Amer Fort

**Answer: (a)**

2. Ankia Naats are a class of one act plays performe[illegible]n which of the following states?

(a) West Bengal
(b) Assam
(c) Bihar
(d) Haryana

**Answer: (b)**

3. The Deposit Insurance and Credit Guarantee Corporation was established in _____.

(a) 1963
(b) 1959
(c) 1961
(d) 1975

**Answer: (c)**

4. As announced in the Budget 2021, the Government of India decided to set up _____ Regional National Institutes for Virology.

(a) 5
(b) 4
(c) 6
(d) 7

**Answer: (b)**

5. Which among the following acids is known as 'muriatic acid'?

(a) Phosphoric acid
(b) Hydrochloric acid
(c) Ascorbic acid
(d) Boric acid

**Answer: (b)**

6. Which among the following colours has the longest wavelength?

(a) Red
(b) Orange
(c) Yellow
(d) Cyan

**Answer: (a)**

7. _____ is an island in the Hirakud reservoir completely inhabited by wild cattle which were once left behind by villagers when the village was vacated for construction of the dam.

(a) Cattle Island
(b) Sagar Island
(c) Abdul Kalam Island
(d) Sriharikota Island

**Answer: (a)**

8. Mount Aconcagua is the highest mountain in ____ ____.

(a) Australia
(b) Europe
(c) South America
(d) North America

**Answer: (c)**

9. Who among the following Governor Generals drafted the Hindu Widows' Remarriage Act?

(a) Lord Hastings
(b) Lord Bentinck
(c) Lord Curzon
(d) Lord Dalhousie

**Answer: (d)**

10. The _____ was founded in Calcutta by Ananda Mohan Bose, Sib Chandra Deb and Umesh Chandra Dutta in 1878.

(a) Atmiya Sabha
(b) Tattvabodhini Sabha
(c) Sadharan Brahmo Samaj
(d) Prarthana Samaj

**Answer: (c)**

11. C. Rajagopalachari founded the Swatantra Party in _____ after breaking away from the Congress.

(a) 1951
(b) 1959
(c) 1962
(d) 1968

**Answer: (b)**

12. 'Unbreakable' is an autobiography of _____.

(a) M. C. Mary Kom
(b) Milkha Singh
(c) Yuvraj Singh
(d) Kapil Dev

**Answer: (a)**

13. Who among the following won the British Academy Television Awards (BAFTA TV Awards) 2021 for 'Leading Actor'?

(a) Paapa Essiedu, I May Destroy You
(b) Paul Mescal, Normal People
(c) John Boyega, Small Axe
(d) Josh O'Connor, The Crown

**Answer: (b)**

14. _____ first mobile robot VIPER will explor e lunar surface when it launches in late 2023.

(a) ESA's
(b) ISRO's
(c) NASA's
(d) RFSA's

**Answer: (c)**

15. Which among the following countries named the cyclone 'Yaas'?

(a) Vietnam
(b) Bhutan
(c) Philippines
(d) Oman

**Answer: (d)**

16. Which among the following companies became the third Indian IT firm to scale Rs. 3 trillion market capital in June 2021?

(a) Infosys
(b) Wipro
(c) Tata Consultancy Service
(d) HCL Technologies

**Answer: (b)**

17. 104th Constitutional Amendment extended the reservation of seats for scheduled caste and scheduled tribe in the Lok Sabha and states assemblies from 70 years to _____.

(a) 78 years
(b) 75 years
(c) 80 years
(d) 85 years

**Answer: (c)**

18. Which among the following Constitutional Amendments made it compulsory for the president to give his assent to a Constitutional Amendment Bill?

(a) 24th
(b) 27th
(c) 32nd
(d) 18th

**Answer: (a)**

19. The first ICC Women's Cricket World Cup was hosted by _____.

(a) India
(b) England
(c) New Zealand
(d) Australia

**Answer: (b)**

20. Pooja Rani won her 2nd Asian Boxing Champior ps gold in the _____ final in Dubai in May 2021.

(a) 85kg
(b) 80kg
(c) 70kg
(d) 75kg

**Answer: (d)**

## General Ability

21. What should come in the place of question mark ? In the following alpha-numeric series? PQ39, RS43, TU47, ?

(a) VW50
(b) WV51
(c) VW51
(d) VW49

**Answer: (c)**

22. In this letter series some of the letters are missing, find the correct alternatives. abcbcdecdefg _ _ _ _ _ _

(a) abcdef

(b) cefghi

(c) defghi

(d) efghid

**Answer: (c)**

23. In the following question, select the odd letter group from the given alternatives.
ABDE PQST TSQP MNPQ

(a) PQST

(b) TSQP

(c) MNPQ

(d) ABDE

**Answer: (b)**

24. In the following question, select the odd letter group from the given alternatives.
LC
NE
XF
PE
VD

(a) PE

(b) LC

(c) VD

(d) XF

**Answer: (a)**

25. Select the option on the same basis as the second term is related to the first term.
Pedagogy : Teaching :: ? : ?

(a) Telepathy : Emotions

(b) Radiology : Sound

(c) Mycology : Fossils

(d) Entomology : Insects

**Answer: (d)**

26. Select the option that is related to the third term on the same basis as the second term is related to the first term.
China : Renminbi :: Japan : ?

(a) Peso

(b) Dinar

(c) Peseta

(d) Yen

**Answer: (d)**

27. In a certain code 'SALE' is written as '4321', 'EARTH' is written as '13579', then how will 'SHARE' be written in that code?

(a) 49351
(b) 49153
(c) 49315
(d) 49513

**Answer: (a)**

28. In a certain code 'PLAYER' is written as 'LPYARE', then how will 'SCHOOL' be written in that code?

(a) CSOHLO
(b) CSOLHO
(c) CSOOHL
(d) CSOOLH

**Answer: (a)**

29. A woman introduces a girl as the daughter of the sister of her father. How is the girl related to the woman?

(a) Sister of woman's father's sister
(b) Daughter of woman's father's sister
(c) Daughter of woman's mother's sister
(d) Mother of woman's father's mother

**Answer: (b)**

30. 8 friends J, K, L, M, N, O, P and Q are sitting around a circular table facing centre, K is sitting between P and M. Q is 3rd to the left of K and 2nd to the right of J. L is sitting between J and P. K and N are not sitting opposite to each other. Who is 3rd to the left of M?

(a) P
(b) O
(c) K
(d) N

**Answer: (b)**

31. In the question two statements are given, followed by two conclusions, I and II. You have to consider the statement to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statement.
Statements: I. some pens are books
II. some books are pots.
Conclusion: (I) Some pens are pots.
(II) Some pots are books.

(a) Only (I) follow
(b) Only (II) follow
(c) Both (I) and (II) follows
(d) Neither (I) nor (II) follow

**Answer: (b)**

32. In the question three statements are given, followed by two conclusions, I and II. You have to consider the statement to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statement.
Statements: I. Some tables are chairs
II. Some chairs are sofas.
III. All plates are tables
Conclusion: (I) Some plates are chairs.
(II) No chair is a plate.

(a) Only (I) follow

(b) Only (II) follow

(c) Neither (I) nor (II) follow

(d) Either (I) or (II) follow

**Answer: (d)**

33. Complete the number series.
12111, 16913, 22515, 28917, ?

(a) 40020

(b) 32418

(c) 36119

(d) 22615

**Answer: (c)**

34. Complete the following number series:
5, 7, 10, 22, 39, 71, ?

(a) 132

(b) 131

(c) 130

(d) 129

**Answer: (a)**

## Arithmetic Ability

41. A number 1700X2 is divisible by 4. Find the possible solutions for the value of X from the given options.

(a) 1, 3

(b) 2, 4

(c) 1, 4

(d) 2, 3

**Answer: (a)**

42. X is defined as the sum of the square root of 81 and the square root of 100. Which of the following is not a possible solution of X.

(a) -1

(b) 1

(c) 19

(d) 0

**Answer: (d)**

43. A driver covers 240 kms in 4 hours on day 1 and covers 260 kms in 5 hours on day 2 and finally covers 300 kms in 3.5 hours on day 3. Find the average distance he covered in 1 hour in the 3 days.

(a) 48 kms

(b) 50 kms

(c) 55 kms

(d) 64 kms

**Answer: (d)**

44. X's marks were increased by 10% for an error correction and then decreased by 10% again to undo the correction. This resulted in reduction of 4 marks from the original score. Find his original score.

(a) 300

(b) 350

(c) 400

(d) 450

**Answer: (c)**

45. The population of a town increases by 25% in the first year, increases by another 20% in the second year and reduces by 50% in the third year.
By how much should it increase in the fourth year to be back at the original level of population?

(a) 20%

(b) 25%

(c) 33.33%

(d) 40%

**Answer: (c)**

46. A good is sold at a profit of X%. The selling price is increased by 100% and the profit percent becomes 10/3 times of X. Find the value of X.

(a) 75%

(b) 87.50%

(c) 90%

(d) 100%

**Answer: (a)**

47. An item is sold for a profit of 140%. If the cost is increased by 20% without changing the selling price, then find the ratio of the new profit percent and the old profit percent.

(a) 5:6
(b) 5:7
(c) 6:5
(d) 7:5

**Answer: (b)**

48. The ages of X and Y are in the ratio of 9:10. If X is 162 months old, then what is the age of Y?

(a) 12 years
(b) 13.5 years
(c) 15 years
(d) 18 years

**Answer: (c)**

49. If X^ 1/2 :16::64:X^ 3/2 , then which of the following is a possible value of X?

(a) -16
(b) -4
(c) 8
(d) 32

**Answer: (d)**

50. X borrowed a sum of Rs 20,000 from the bank at agreement of simple interest in the 1st year and compound interest in the 2nd year. If the rate of terest is 50%, then find the amount that X has to repay it to the bank.

(a) Rs 45,000
(b) Rs 40,000
(c) Rs 42,500
(d) Rs 47,500

**Answer: (a)**

52. X jogs for 5 kms East, then 3 kms North and then 9 kms West. Find the minimum distance between his current and original positions.

(a) 18 kms
(b) 17 kms
(c) 10 kms
(d) 5 kms

**Answer: (d)**

53. A fire engine is 50% faster than a car. If the car can cover a distance in 3 hours, in how much time can the fire engine cover the same distance?

(a) 2.5 hours
(b) 2 hours
(c) 1.5 hours
(d) 1 hour

**Answer: (b)**

54. A, B and C can together do a job in 300 days. A and B can do it in 450 days while B and C can do it in 600 days. In how many days can C do the job alone?

(a) 450
(b) 600
(c) 750
(d) 900

**Answer: (d)**

55. A can do the job in 20 days and B is half as efficient as A. C is 2/3rd as efficient as B. If all 3 of them work together, on what day will the job be done?

(a) 10th
(b) 11th
(c) 12th
(d) 13th

**Answer: (b)**

56. The height of a cone is 12 times its radi[illegible] A sp[illegible]e has the double the radius of the cone. Find the ratio of the volume of the cone and the sp[illegible] the radius of the cone is 1.5 cm.

(a) 3:8
(b) 8:3
(c) 3:4
(d) 4:3

**Answer: (a)**

57. What is half of the total surface area of a hemisphere whose radius is 21 cm?

(a) 693 sq cm
(b) 1386 sq cm
(c) 2079 sq cm
(d) 4158 sq cm

**Answer: (c)**

## General English

81. The sentence below has been divided into three parts. Select the part of the sentence that has an error. If the sentence has no error, select the option 'No Error'.
The tasting room has a glorious/ view of the shining Lake Mendocino,/ set of by the dusty chaparral all around.

(a) The tasting room has a glorious

(b) view of the shining Lake Mendocino,

(c) set of by the dusty chaparral all around.

(d) No Error

**Answer: (c)**

82. The sentence below has been divided into three parts. Select the part of the sentence that has an error. If the sentence has no error, select the option 'No Error'.
Meg and me quickly hid in/ the panic room, but our/ safety was still in peril.

(a) Meg and me quickly hid in

(b) the panic room, but our

(c) safety was still in peril.

(d) No Error

**Answer: (a)**

83. Select the word segment that substitutes (replaces) the bracketed word segment correctly and completes the sentence meaningfully. Select the option 'no correction required' if the sentence is correct as given.
(They disposed them without any trouble), because t' enemies had no organization or strength in any type of numbers.

(a) They disposed of them without much troubl

(b) They disposed them off without any '

(c) They disposed them without much trouble

(d) No correction required

**Answer: (b)**

84. Select the word segment that substitutes (replaces) the bracketed word segment correctly and completes the sentence meaningfully. Select the option 'no correction required' if the sentence is correct as given.
There (was neither trace of cancer, and neither was there) any indication that she ever had any!

(a) was no trace of cancer, or

(b) was neither any trace of cancer, nor there was

(c) was neither trace of cancer, and neither there was

(d) No correction required

**Answer: (b)**

85. Fill in the blank with the most appropriate choice
They are surprised into open-mouthed silence at suddenly finding the brazen _____ trespassing within their domestic domain.

(a) developer
(b) landloper
(c) galloper
(d) interloper

**Answer: (d)**

86. Fill in the blank with the most appropriate choice
He stopped embracing jealousy not wanting to hear a _____ confessional in the hallway outside the lavatories.

(a) goblin
(b) violin
(c) maudlin
(d) muslin

**Answer: (c)**

87. The question below consist of a set of labelled sentences. Out of four options given, select the most logical order of the sentences which form a paragraph.
Aladdin is a poor street urchin who spends his time stealing food from the marketplace in the city of Agrabah.
P. What he unwittingly gets is a fun-loving genie who only wishes to have his freedom.
Q. Little do they know is that the Sultan's sinister adviser Jaffar has his own plans for both Aladdin and the lamp.
R. His adventures begin when he meets a young girl who happens to be Princess Jasmine, who is forced to be married by her wacky yet estranged father.
S. Aladdin's luck suddenly changes when he retrieves a magical lamp from the Cave of Wonders.
Tune-in this Friday, to witness the mystical nights of Agrabah unfold.

(a) RPSQ
(b) RQSP
(c) RQPS
(d) RSPQ

**Answer: (d)**

88. Select the word that is similar in meaning (SYNONYM) to the word given below Allusion

(a) Intimation
(b) Insignificance
(c) Silence
(d) Reality

**Answer: (a)**

89. Select the word that is opposite in meaning (ANTONYM) to the word given below Bulwark

(a) Bastion

(b) Rampart

(c) Fortification

(d) Assail

**Answer: (d)**

90. Four words are given, out of which only one word is spelt correctly. Choose the correctly spelt word.

(a) perseverence

(b) perserverance

(c) perseverance

(d) perserverence

**Answer: (c)**

91. Four words are given, out of which only one word is spelt correctly. Choose the correctly spelt word.

(a) maintainance

(b) maintenance

(c) maintnance

(d) meintenance

**Answer: (b)**

92. Select the most appropriate meaning of the giv diom.
Up a blind alley

(a) Going down a course of action that lea bad outcome.

(b) To go full speed, especially while driving a vehicle.

(c) Avoid responsibility by giving it to someone else.

(d) When you absolutely will not allow something to happen.

**Answer: (a)**

93. Select the most appropriate meaning of the given idiom.
Twenty three skidoo

(a) To listen very carefully.

(b) To eat a lot and eat it quickly.

(c) A hasty departure.

(d) A deal that is made without first examining it.

**Answer: (c)**

94. Select the most appropriate 'one word ' for the expressions given below.
A leader who sways his followers by his oratory

(a) Demagogue
(b) Mercurial
(c) Imbroglio
(d) Omnifarious

**Answer: (a)**

95. Select the most appropriate 'one word ' for the expressions given below.
An act of ending the employment of a worker or group of workers

(a) Impeach
(b) Layoff
(c) Matriarchy
(d) Paranoia

**Answer: (b)**

96. What is a Spam mail?

(a) An e-mail containing inappropriate content
(b) A junk mail or junk newsgroup postings
(c) An e-mail containing virus
(d) An e-mail containing promontory content

**Answer: (b)**

97. Who did the letter claim Anna Swelund to be in t spam e-mail for Ericsson?

(a) Executive Marketing Manager
(b) Executive Promotion Manager
(c) Executive Sales Manager
(d) Executive Operations Manager

**Answer: (b)**

100. Why is it impossible to get rid of junk-email?

(a) Because the authorities controlling internet choose not to prevent spam e-mails.
(b) Because companies earn money from these mailing campaigns
(c) Because the internet is private
(d) Because the internet is public

**Answer: (d)**

## Discipline1

102. The triangle law of forces states that_____.

(a) If a number of coplanar concurrent forces, acting simultaneously on a body are represented in magnitude and direction by the sides of a polygon taken in order, then their resultant may be represented in magnitude and direction by the closing side of a polygon, taken in the opposite order.

(b) If two forces acting simultaneously on a body are represented in magnitude and direction by the two sides of triangle taken in order then their resultant may be represented in magnitude and direction by the third side taken in opposite order .

(c) If two forces, acting simultaneously on a particle, be represented in magnitude and direction by the two adjacent sides of a parallelogram then their resultant may be represented in magnitude and direction by the diagonal of the parallelogram which passes through their point of intersection

(d) A resultant force is a single force which can replace two or more forces and produce the same effect on the body as the forces.

**Answer: (b)**

104. A machine raised a load of 600 N through a distance of 150 mm. The effort, a force of 30 N moved 0.88 m during the process. Calculate the Mechanical Advantage.

(a) 20

(b) 10

(c) 30

(d) 25

**Answer: (a)**

105. Which of the following does not work on the ar cation of lever?

(a) Crow bar

(b) A pair of scissors

(c) Fire tongs

(d) Turning the cap of pen

**Answer: (d)**

106. Which boiler uses evaporation of the feed water by means of superheated steam from the superheater as the principle of working?

(a) Loeffler Boiler

(b) La mont boiler

(c) Benson boiler

(d) Babcock and wilcox boiler

**Answer: (a)**

107. What is the purpose of the feed check valve?

(a) Its objective is to put off the fire in the furnace of the boiler when the level of water in the boiler falls to an unsafe limit

(b) Its function is to regulate the supply of water, which is pumped into the boiler, by the feed pump.

(c) To check the pressure supplied to the boiler

(d) Increase the temperature of steam

**Answer: (b)**

108. The natural draught produces _____draught than mechanical draught.

(a) Less

(b) More

(c) Equal

(d) equivalent

**Answer: (a)**

109. What is the purpose of Morse test?

(a) To find Brake power

(b) To find indicated power

(c) To find brake thermal efficiency

(d) To find volumetric efficiency

**Answer: (b)**

110. Which device is used for atomising and vaporis the fuel and mixing with air in suitable proportions ?

(a) Spark Plug

(b) Carburettor

(c) Fuel pump

(d) Feed check valve

**Answer: (b)**

111. What is the angle between two threads in Whitworth thread?

(a) 60 degree

(b) 25 degree

(c) 30 degree

(d) 55 degree

**Answer: (d)**

112. What is the abbreviation for the term Pitch circle diameter?

(a) MFG

(b) PCD

(c) MECH

(d) REF

**Answer: (b)**

113. Which part is not included in assembly drawing of steam engine cross head?

(a) Piston Rod
(b) cotter
(c) Gudgeon pin
(d) Split cotter

**Answer: (d)**

116. In terms of radial cams, circle drawn from the centre of the cam through the pitch point is called _____.

(a) Base circle
(b) pitch circle
(c) pitch curve
(d) Prime circle

**Answer: (b)**

117. Which of the following applications are not obtained from inversion of single slider crank chain?

(a) Reciprocating compressor
(b) Elliptical Trammel
(c) Oscillating cylinder engine
(d) Rotary engine

**Answer: (b)**

118. Which of the following is a non metallic gear ma' als?

(a) Cast Iron
(b) Steel
(c) Bronze
(d) Raw hide

**Answer: (d)**

119. Calculate the vertical height of a Watt governor when it rotates at 60 r.p.m. Also find the change in vertical height when its speed increases to 61 r.p.m.

(a) 0.24 mm, 8 mm
(b) 0.63 mm, 8.2 mm
(c) 0.59 mm, 0.15 mm
(d) 0.32 mm, 0.20 mm

**Answer: (a)**

120. Which part connects the driving shaft to the driven shaft?

(a) Brake
(b) lever
(c) clutch
(d) Spark plug

**Answer: (c)**

## Discipline2

121. One of the reasons for gear noise is _____.

(a) Damaged bearings of rear drive pinion
(b) Loose bolts securing ring gear
(c) Insufficient or wrong kind of gear oil
(d) Distorted rear axle

**Answer: (c)**

122. Which of the following parts are not included in Lucas mechanical fuel injection system?

(a) Control spring
(b) Distributor
(c) Pressure relief valve
(d) Temperature Sensor

**Answer: (d)**

123. In a spray gun used for painting body of an automobile, the maximum volume of paint is controlled by using _____.

(a) Needle adjusting screw
(b) Electric button
(c) Stop Valve
(d) control valve

**Answer: (a)**

124. Which of the following shapes does the leaf spring used in automobiles have?

(a) Rectangular
(b) Triangular
(c) Semi elliptical
(d) Hemispherical

**Answer: (c)**

125. Which of the following stresses are induced in the arms of the flywheel?

(a) Longitudinal Stress
(b) Compression Stress
(c) Bending stress
(d) Hoop Stress

**Answer: (c)**

126. What does Newton's Second law states?

(a) A particle of mass “m” acted upon by an unbalanced force “F” experiences an acceleration “a” that has the same direction as the force and a magnitude that is directly proportional to the force.

(b) A particle originally at rest, or moving in a straight line with constant velocity, tends to remain in this state provided the particle is not subjected to an unbalanced force.

(c) The mutual forces of action and reaction between two particles are equal, opposite, and collinear.

(d) If a particle is located at or near the surface of the earth, the only significant gravitational force is that between the earth and the particle.

**Answer: (a)**

127. What are the applications of vector dot product?

(a) To find out stress

(b) To find the torque produced

(c) To find out moment of inertia

(d) To determine the projection of a vector in a specified direction

**Answer: (d)**

129. Proof of resilience of material per unit volume is known to be_____.

(a) Modulus of resilience

(b) Elasticity modulus

(c) Principal stresses

(d) Modulus of rigidity

**Answer: (a)**

130. Ratio of lateral strain to longitudinal strain is known as_____.

(a) Modulus of elasticity

(b) Bulk modulus

(c) Poisson's Ratio

(d) Shear modulus

**Answer: (c)**

131. What stresses are induced in the body due to temperature change?

(a) Thermal stress

(b) simple stress

(c) Longitudinal stress

(d) elastic stress

**Answer: (a)**

133. In a shaft, the amplitude of torsional vibration is zero at _____.

(a) Nodal point

(b) Mid of the shaft

(c) End of the Shaft

(d) Point of contraflexure

**Answer: (a)**

134. When there is a reduction in amplitude over every cycle of vibration, the motion is said to be as?

(a) Longitudinal vibration

(b) Damped vibration

(c) Natural Vibration

(d) Free vibration

**Answer: (b)**

135. The mass of a single degree damped vibrating system is 7.5 kg and makes in 24 free oscillations in 14 seconds when disturbed from its equilibrium position. The amplitude of vibration reduces to 0.25 of its initial value after five oscillations. Determine the stiffness of the spring.

(a) 500 N/m

(b) 750 N/m

(c) 860 N/m

(d) 200 N/m

**Answer: (c)**

137. Ratio of dynamic viscosity and density of fluid is known as _____.

(a) Newton's law of viscosity

(b) Kinematic viscosity

(c) Viscous flow

(d) Radiant flow

**Answer: (b)**

138. Rate of increase of pressure in vertical direction is equal to the weight density of fluid at that point. This is called as_____.

(a) Pascal's law

(b) pressure head

(c) Hydrostatic law

(d) Dalton's law

**Answer: (c)**

139. Which of the following fluids have constant density fluid flow?

(a) Compressible fluid

(b) Incompressible fluid

(c) Rotational fluid

(d) Irrotational fluid

**Answer: (b)**

140. What factors determine the stability of a submerged body?

(a) Only Centre of Buoyancy
(b) Only Centre of Gravity
(c) Metacenter
(d) Centre of gravity and center of buoyancy

**Answer: (d)**

## Discipline3

141. Example of vortex flow is _____.

(a) A whirlpool in a river
(b) Water flowing from a overhead tank
(c) Water flowing out of Dam
(d) Water running from a pipe

**Answer: (a)**

142. By what process heat is flown through the solids?

(a) Thermal diffusion
(b) Convection
(c) Radiation
(d) Parallel flow

**Answer: (a)**

143. Heat loss from an insulated cylindrical system in an external convective environment can generally be minimized by?

(a) Decreasing the thickness of insulation
(b) Increasing the thickness of insulation
(c) Placing the same size
(d) combining of two sheets

**Answer: (b)**

144. The sum of the absorptivity, reflectivity, and transmissivity must be equal to _____.

(a) 0
(b) 2
(c) 0.5
(d) 1

**Answer: (d)**

145. At Reynolds numbers of the order of 10, pressure drag accounts now for about _____of the total drag.

(a) half
(b) one fourth
(c) Twice
(d) Thrice

**Answer: (a)**

146. Which law of thermodynamics is related to Entropy?

(a) 1st law

(b) 2nd law

(c) 3rd law

(d) Both 2nd and 3rd law

**Answer: (d)**

147. In reference to the Psychometric Charts, which of the following can be determined if Wet bulb temperature and relative humidity are known?

(a) Dry bulb temperature

(b) Absolute Humidity

(c) Relative humidity

(d) Dew Point temperature

**Answer: (a)**

148. What are the methods that are not employed to increase the specific output and thermal efficiency of the plant?

(a) Reheating

(b) Regeneration

(c) Intercooling

(d) pre heating

**Answer: (d)**

149. In heating process _____ is defined as th atio of actual useful work to the maximum useful work.

(a) Efficiency

(b) Effectiveness

(c) Percentage error

(d) Change in enthalpy

**Answer: (b)**

150. The efficiency of a Carnot engine using an ideal gas as the working substance is _____.

(a) (T1-T2)/T1

(b) T1/(T1-T2)

(c) T2/(T1-T2)

(d) T1+T2

**Answer: (a)**

151. What % of wind's kinetic energy is converted into electricity?

(a) 10%

(b) 15%

(c) 20%

(d) 30%

**Answer: (d)**

153. When was the first OTEC plant constructed?

(a) 1930
(b) 1908
(c) 1880
(d) 1935

**Answer: (a)**

154. Solar thermal conversion method converts radiation to heat using _____.

(a) Solar lamp
(b) Solar cooker
(c) Solar panels
(d) Solar flat collectors

**Answer: (d)**

155. Inward reaction turbine having radial discharge at outside is known as _____.

(a) Kaplan Turbine
(b) Francis Turbine
(c) Impulse turbine
(d) Steam turbine

**Answer: (b)**

156. Which of the following are not the parts of Radial ow reaction turbine?

(a) Casing
(b) Runner
(c) Draft tube
(d) inlet pipe

**Answer: (d)**

157. The device which is used to increase the intensity of the pressure of water by means of hydraulic energy available from large amount of water at low pressure is known as_____.

(a) Hydraulic humidifier
(b) Hydraulic intensifier
(c) Orificemeter
(d) Venturimeter

**Answer: (b)**

158. Which device gives the Continuous and smooth discharge?

(a) Centrifugal pump
(b) Reciprocating pump
(c) Hydraulic Ram
(d) Hydraulic accumulator

**Answer: (a)**

159. A manufacturing system in which a number of machines are controlled by a computer through direct connection and in real time is called as _____.

(a) Numerical control

(b) Direct Numerical control

(c) CNC

(d) Quality control

**Answer: (b)**

160. Which of the following are used to move workpieces in and out of Flexible manufacturing system?

(a) Gantry System

(b) Trolleys

(c) Light motor vehicles

(d) Trucks

**Answer: (a)**

## Discipline4

161. All nodes are connected to a single communication line that carries messages in both directions is called as_____.

(a) Ring Topology

(b) Star Topology

(c) Bus Topology

(d) Ethernet

**Answer: (c)**

162. What is the full form of CIMOSA?

(a) Computer Integrated Manufacturing Open System Architecture

(b) Computer Integrated Manufacturing Open System Application

(c) Computer Integrated Manufacturing Open System Appliance

(d) Computer Integrated Manufacturing Open System Adherence

**Answer: (a)**

163. _____ is concerned with the problem of monitoring the progress of the product as it is being processed, assembled, moved, and inspected in the factory.

(a) Manufacturing control

(b) Shop floor control

(c) Inventory control

(d) Manufacturing planning and control

**Answer: (b)**

164. In the valve timing diagram for either two stroke or four stroke the inlet valve opens at what angle before the TDC?

(a) 5 degree
(b) 30 degree
(c) 25 degree
(d) 10 degree

**Answer: (d)**

165. A four stroke four cylinder diesel engine develops a power of 180 Kw at 1500 rpm.The crank angle over which injection takes place is 15 degree.Calculate the time taken for injection of fuel.

(a) 1.66 × 10 -3
(b) 2.5 sec
(c) 0.32 sec
(d) 0.98 sec

**Answer: (a)**

166. Atomization in air injection system is done using _____.

(a) Fuel cam
(b) Pump cam
(c) Spray tip
(d) Spray Valve

**Answer: (d)**

167. What are the conditions for maximum pressure constant volume Fuel-air cycle?

(a) 6%rich, F/A = 0.072
(b) 20%rich, F/A = 0.083
(c) Chemically correct air fuel ratio
(d) 6%rich F/A = 0.0745

**Answer: (b)**

168. Compressor pistons are made up of _____.

(a) Cast Iron
(b) Mild steel
(c) Lead
(d) Iron

**Answer: (a)**

169. In which evaporator Conditioned air is distributed through air distribution systems?

(a) Air cooler
(b) Liquid cooler
(c) Flooded refrigerator
(d) Heating coil

**Answer: (a)**

170. An air cooling evaporator has a mass air flow of 8.4Kg/s and published rating of 3.8Kw/K. What will be it's rated duty at -15 degree C coldroom temperature with refrigerant at -21 degree c. What is the true LMTD?

(a) 2.8 K

(b) 4.5 K

(c) 6.2 K

(d) 4.6 K

**Answer: (b)**

171. In which type of condenser, tubes are used?

(a) Air Condenser

(b) Water Condenser

(c) Evaporative Condenser

(d) Shell and tube Condenser

**Answer: (d)**

172. In centrifugal chiller controls, the loss of flow in evaporator or condenser is detected by _____.

(a) Flow Switch

(b) Preset valve

(c) DDC unit controller

(d) Pressure Sensor

**Answer: (a)**

173. Which type of forecasting methods lo[illegible]at p[illegible] patterns of data and attempt to predict the future based upon the underlying patterns co[illegible] within those data?

(a) Time series models

(b) Associative models

(c) Quantitative Methods

(d) Simple Average method

**Answer: (a)**

174. Time based loading, start and finish times, due dates, dispatching rules, re-scheduling all these comes under which functions?

(a) Loading

(b) Process planning

(c) Scheduling

(d) Demand forecasting

**Answer: (c)**

175. Formula for Total carrying cost per year is_____.

(a) Annual demand/Ordered quantity

(b) Procurement cost/Ordered quantity

(c) Carrying cost per unit × unit cost × average inventory per cycle

(d) Minimum cost × ordered quantity

**Answer: (c)**

176. In job shop production system:

(a) Machines and methods employed keeps changing

(b) Same methods and equipment is used

(c) Machines are grouped on functional basis

(d) Same job and same methods everytime is implemented

**Answer: (a)**

177. What factors are to be considered before designing a product?

(a) Quantity of product

(b) Customer background

(c) Location of the plant

(d) Product value, consumer quality

**Answer: (d)**

178. Name the metals used in thermit welding.

(a) Hydrogen, Helium

(b) Acetylene, oxygen

(c) Tungsten

(d) Iron oxide, Granular aluminium

**Answer: (d)**

179. The process of removing metal to the desired shape from the side or edge of the sheet is called as_____.

(a) Trimming

(b) Broaching

(c) Notching

(d) Lancing

**Answer: (c)**

180. What is the purpose of using chills in casting process?

(a) To prepare mould

(b) Fast extraction of heat

(c) Allow provide pattern allowance

(d) Acts as catalyst

**Answer: (b)**

## Discipline5

181. Which of the following is the application of Continuous casting?
(a) Production of billets
(b) Flywheels
(c) Rocker arms
(d) Gears
**Answer: (a)**

182. What is the temperature range achieved in combustion zone of cupola furnace?
(a) 2000 degree C-3000 degree C
(b) 1000 degree C-1300 degree C
(c) 1540 degree C-1870 degree C
(d) 2500 degree C-2600 degree C
**Answer: (c)**

183. Broaching speed for copper alloys is_____.
(a) 3 to 8 m/min
(b) 10 to 12 m/min
(c) 6 to 30 m/min
(d) 8 to 10 m/min
**Answer: (d)**

184. In an Electro discharge machine the workpiece is as _____.
(a) Cathode
(b) Electrolyte
(c) Catalyst
(d) Anode
**Answer: (d)**

185. What a happens in a taper turning?
(a) The diameter decreases gradually forming a conical shape
(b) Removes excess material
(c) Increases diameter
(d) Increases length
**Answer: (a)**

186. In Plasma arc cutting what is the cutting speed of stainless steel?
(a) 380 mm/min
(b) 500 mm/min
(c) 100 mm/min
(d) 50 mm/min
**Answer: (a)**

187. Discontinues chips are produced because of_____.

(a) Work strain, brittle materials

(b) Welded materials

(c) Hard materials

(d) Ductile materials

**Answer: (a)**

188. The customer joins the queue and after waiting for certain time looses his patience and leaves the queue. This is called as_____.

(a) Balking

(b) collusion

(c) Jockeying

(d) Reneging

**Answer: (d)**

189. For one machine, n jobs the concept used is _____.

(a) LIFO

(b) Service in random order

(c) Service by highest profit rule

(d) FIFO

**Answer: (d)**

190. Considering the bathtube curve from replaceme model, what causes the failure in youth stage?

(a) Operational errors, heavy load, ove

(b) wear, tear, creep

(c) Faulty design

(d) Environmental problems

**Answer: (a)**

191. In which type of problems, the matrix of the problem must be square matrix?

(a) Transportation problems

(b) Assignment problems

(c) Allocation problems

(d) Linear problems

**Answer: (b)**

192. Which method can be used to solve transportation model problems?

(a) North West corner method

(b) Dual simplex method

(c) Big M method

(d) Variable method

**Answer: (a)**

193. While operating a CMM, what is the use of format command?

(a) Direct the probe to data collection points

(b) Translate the data into the form desired for display or printout

(c) To decode the given data

(d) Compare the distance traversed to the standard built into the machine for that axis.

**Answer: (b)**

194. What is the purpose of slit washer in Johansson Mikrokator?

(a) Rotation of glass pointer

(b) Movement of bell crank lever

(c) To arrest the rotation of axis along the plunger

(d) Rotation of pointer

**Answer: (c)**

195. The minimum permissible diameter of the shaft exceeds the maximum allowable diameter of the hole. This type of fit is called _____.

(a) Transition fit

(b) Clearance fit

(c) Tolerance fit

(d) Interference fit

**Answer: (d)**

196. In quality inspection, ISO 10002:2004 stands for _____.

(a) Quality management systems, guidelines for quality management in projects

(b) Guidelines for quality management documentation

(c) Quality management, guidelines for training

(d) Quality management, customer satisfaction, guidelines for complaints handling in organization

**Answer: (d)**

197. The measurements taken by using a sine bar are as follows:
Angle formed between upper surface of sine bar and datum : 30 degree Distance between center of rollers : 200 mm.
Find the height difference between the rollers.

(a) 100 mm

(b) 400 mm

(c) 250 mm

(d) 150 mm

**Answer: (a)**

198. Semi finished goods at various stages of manufacturing cycle comes under?

(a) In-Process inventories

(b) Finished inventories

(c) Raw inventories

(d) Indirect inventories

**Answer: (a)**

199. Given that , Annual usage U = 60 Units Procurement cost P = Rs 15 per order, Cost per piece C = Rs 100,cost of carrying inventory I, a percentage including expenditure on obsolescence, taxes, insurance etc = 10%. Calculate EOQ.

(a) 9 units

(b) 10 units

(c) 11 units

(d) 12 units

**Answer: (d)**

200. According to ABC analysis, What are C -items?

(a) Low valued, but maximum numbered items

(b) Medium valued items

(c) High valued items, few in number

(d) Low value low numbered items

**Answer: (a)**

# Answer key

Answer key from the Delhi Subordinate Services Selection Board's official answer key for this sitting. "—" means the key gave none.

## General Awareness

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | **(a)** | 2 | **(b)** | 3 | **(c)** | 4 | **(b)** | 5 | **(b)** | 6 | **(a)** |
| 7 | **(a)** | 8 | **(c)** | 9 | **(d)** | 10 | **(c)** | 11 | **(b)** | 12 | **(a)** |
| 13 | **(b)** | 14 | **(c)** | 15 | **(d)** | 16 | **(b)** | 17 | **(c)** | 18 | **(a)** |
| 19 | **(b)** | 20 | **(d)** | | | | | | | | |

## General Ability

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | **(c)** | 22 | **(c)** | 23 | **(b)** | 24 | **(a)** | 25 | **(d)** | 26 | **(d)** |
| 27 | **(a)** | 28 | **(a)** | 29 | **(b)** | 30 | **(b)** | 31 | **(b)** | 32 | **(d)** |
| 33 | **(c)** | 34 | **(a)** | | | | | | | | |

## Arithmetic Ability

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 41 | **(a)** | 42 | **(d)** | 43 | **(d)** | 44 | **(c)** | 45 | **(c)** | 46 | **(a)** |
| 47 | **(b)** | 48 | **(c)** | 49 | **(d)** | 50 | **(a)** | 52 | **(d)** | 53 | **(b)** |
| 54 | **(d)** | 55 | **(b)** | 56 | **(a)** | 57 | **(c)** | | | | |

## General English

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 81 | **(c)** | 82 | **(a)** | 83 | **(b)** | 84 | **(b)** | 85 | **(d)** | 86 | **(c)** |
| 87 | **(d)** | 88 | **(a)** | 89 | **(d)** | 90 | **(c)** | 91 | **(b)** | 92 | **(a)** |
| 93 | **(c)** | 94 | **(a)** | 95 | **(b)** | 96 | **(b)** | 97 | **(b)** | 100 | **(d)** |

## Discipline1

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 102 | **(b)** | 104 | **(a)** | 105 | **(d)** | 106 | [illegible] | 107 | **(b)** | 108 | **(a)** |
| 109 | **(b)** | 110 | **(b)** | 111 | **(d)** | 112 | **(b)** | 113 | **(d)** | 116 | **(b)** |
| 117 | **(b)** | 118 | **(d)** | 119 | **(a)** | 120 | **(c)** | | | | |

## Discipline2

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 121 | **(c)** | 122 | **(d)** | 123 | **(a)** | 124 | **(c)** | 125 | **(c)** | 126 | **(a)** |
| 127 | **(d)** | 129 | **(a)** | 130 | **(c)** | 131 | **(a)** | 133 | **(a)** | 134 | **(b)** |
| 135 | **(c)** | 137 | **(b)** | 138 | **(c)** | 139 | **(b)** | 140 | **(d)** | | |

## Discipline3

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 141 | **(a)** | 142 | **(a)** | 143 | **(b)** | 144 | **(d)** | 145 | **(a)** | 146 | **(d)** |
| 147 | **(a)** | 148 | **(d)** | 149 | **(b)** | 150 | **(a)** | 151 | **(d)** | 153 | **(a)** |
| 154 | **(d)** | 155 | **(b)** | 156 | **(d)** | 157 | **(b)** | 158 | **(a)** | 159 | **(b)** |
| 160 | **(a)** | | | | | | | | | | |

## Discipline4

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 161 | **(c)** | 162 | **(a)** | 163 | **(b)** | 164 | **(d)** | 165 | **(a)** | 166 | **(d)** |
| 167 | **(b)** | 168 | **(a)** | 169 | **(a)** | 170 | **(b)** | 171 | **(d)** | 172 | **(a)** |
| 173 | **(a)** | 174 | **(c)** | 175 | **(c)** | 176 | **(a)** | 177 | **(d)** | 178 | **(d)** |
| 179 | **(c)** | 180 | **(b)** | | | | | | | | |

## Discipline5

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 181 | **(a)** | 182 | **(c)** | 183 | **(d)** | 184 | **(d)** | 185 | **(a)** |
| 186 | **(a)** | 187 | **(a)** | 188 | **(d)** | 189 | **(d)** | 190 | **(a)** |
| 191 | **(b)** | 192 | **(a)** | 193 | **(b)** | 194 | **(c)** | 195 | **(d)** |
| 196 | **(d)** | 197 | **(a)** | 198 | **(a)** | 199 | **(d)** | 200 | **(a)** |