PREVIOUS YEAR PAPER

DSSSB Junior Engineer (E and M) 2022 — 21 March 2022, Shift 2

DSSSB Other Posts · 21 March 2022 · Shift 2

128 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: 72 (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 21 March 2022, Shift 2. 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-2022-junior-engineer-e-and-m-21-mar-shift-2/

Mental Ability

1. Select the letter that will fill in the blank and complete the given series.
M, N, Q, R, U, V, _____

(a) Z
(b) Y
(c) W
(d) X

Answer: (b)

2. Identify the number that DOES NOT belong to the following series.
3, 7, 17, 31, 47, 79

(a) 7
(b) 17
(c) 47
(d) 79

Answer: (c)

3. If in a certain code language, LAPTOP is written as APLOPT, then how would you write BEFORE in the same language?

(a) EFBREO
(b) EFBORE
(c) FEBORE
(d) FEBREO

Answer: (a)

4. Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster.
CLIMBING : DMJNCJOH :: ROTATION : ?

(a) SPBUUJOP

(b) SPUBJUPO

(c) SPUBUJPO

(d) STUBJUOP

Answer: (c)

5. Select the option that is related to the third term in the same way as the second term is related to the first term.
Sheep : Flock :: Soldiers : ?

(a) Crowd

(b) Throng

(c) League

(d) Army

Answer: (d)

6. In a certain code language, EXAMPLE is written as FWBLQKF. How would you write PENCIL in the same language?

(a) QFOBJK

(b) QDOBHM

(c) ODQBHK

(d) QDOBJK

Answer: (d)

7. In a certain code language, OPENING is coded as LRBPFPD. How will CEREMONY be written in that language?

(a) AGOGIPKA

(b) ZGOGJQKA

(c) AGOGJQKB

(d) ZGOPQQKA

Answer: (b)

8. Five friends H, I, J, K and L are sitting around a circle, facing away from the centre. H is sitting immediately to the left of K. Only L is sitting between H and I.
Who is sitting immediately to the right of K?

(a) H

(b) I

(c) J

(d) L

Answer: (c)

9. A shopkeeper increased the original price of a certain product by 25% and then increased the new price by 5%. By how much per cent in total the price of the product increased?

(a) 30%

(b) 27.25%

(c) 37.5%

(d) 31.25%

Answer: (d)

10. In the following question, two statements are given and these statements are followed by two conclusions numbered (I) and (II). You have to take the given two statements to be true even if they seem to be at variance from commonly known facts. Read the conclusions and then decide which of the given conclusions logically follows from the two given statements, disregarding commonly known facts.
StatementA: Some A are B.
Statement B: Some B are C.
Statement C: All C are D.
Conclusions:
I. Some D are B.
II. Some A are D.

(a) Either conclusion (I) or (II) follow

(b) Only conclusion (I) follows

(c) Only conclusion (II) follows

(d) Both conclusions (I) and (II) follow

Answer: (b)

11. Read the given statements and conclus[illegible]ar[illegible]lly. Assuming that the information given in the statements is true, even if it appears to be at v[illegible]e with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.
Statements:
All bags are clothes.
Some clothes are silk.
All silk are worms.
Conclusions:
(I) All clothes are worms is a possibility.
(II) Some bags are silk.

(a) Only Conclusion (I) definitely follows.

(b) Only Conclusion (II) definitely follows.

(c) Both Conclusion (I) and Conclusion (II) definitely follow.

(d) Both Conclusion (I) and Conclusion (II) definitely do not follow.

Answer: (a)

12. Which two signs should be interchanged in the following equation to make it correct?
297 ÷ 53 × 84 + 14 – 381 = 234

(a) × and +
(b) ÷ and +
(c) × and –
(d) – and ÷

Answer: (b)

15. John walks 2.5 km south ward and then turns left and walks 5 km. He again turns left and walks another 5 km. He then turns towards his right and starts walking straight. In which direction is he walking now?

(a) North-East
(b) East
(c) North
(d) North-West

Answer: (b)

General Awareness

21. The Non-Cooperation Movement was organized under leadership of Mahatma Gandhi and the Indian National Congress from September 1920 to February _____

(a) 1923
(b) 1925
(c) 1924
(d) 1922

Answer: (d)

22. Where was the third round Table conference held in 1932?

(a) Agra
(b) Delhi
(c) London
(d) Chicago

Answer: (c)

23. Who clinched the Indian Premier League (IPL) 2021 title defeating Kolkata Knight Riders?

(a) Mumbai Indians
(b) Royal Challengers Bangalore
(c) Rajasthan Royals
(d) Chennai Super Kings

Answer: (d)

24. Who created history by becoming the second Indian male shuttler to secure a medal in the BWF World Championships?

(a) Srikanth Kidambi
(b) B. Sumeeth Reddy
(c) B Sai Praneeth
(d) HS Prannoy

Answer: (c)

25. Jal Shakti' Ministry was formed in the year _____

(a) 2017
(b) 2018
(c) 2019
(d) 2020

Answer: (c)

26. India is the largest producer of _____

(a) Corn
(b) Milk
(c) Wheat
(d) Seafood

Answer: (b)

27. Which country named the cyclone that headed tc rds the coastline of Maharashtra and Gujarat in June 2020 as 'Nisarga'?

(a) Nepal
(b) Bangladesh
(c) Myanmar
(d) Afghanistan

Answer: (b)

28. When does Bhutan celebrates its National day?

(a) 07 October
(b) 17 October
(c) 17 December
(d) 07 December

Answer: (c)

29. Which of the following is NOT primarily a physical sport?

(a) Cricket
(b) Tennis
(c) Football
(d) Bridge

Answer: (d)

30. Thaipusam is a festival dedicated to:
    (a) Lord Murugan
    (b) Lord Vishnu
    (c) Lord Arjuna
    (d) Lord Ganesha

    Answer: (a)

31. The Kali Topi dance is performed on:
    (a) Indian Independence day
    (b) Indian Republic day
    (c) Sikkimese New Year day
    (d) Assamese New Year day

    Answer: (c)

32. In which year the United Nations Environment Programme (UNEP) succeeded in forging an agreement to freeze CFC production at 1986 levels?
    (a) 1990
    (b) 1987
    (c) 1988
    (d) 1992

    Answer: (b)

33. Which of the following Ocean's warming causes , El Nino , an abnormal weather pattern?
    (a) The Indian Ocean
    (b) The Arctic Ocean
    (c) The Pacific Ocean
    (d) The Atlantic Ocean

    Answer: (c)

34. In which year was, the subsidiary alliance imposed in Awadh?
    (a) 1810
    (b) 1801
    (c) 1805
    (d) 1808

    Answer: (b)

35. Where did the Harappan culture originated and flourished?
    (a) The Indus Valley
    (b) The Western Gangetic basin
    (c) The Brahmaputra Valley
    (d) The lower Gangetic Valley

    Answer: (a)

36. The voting age was reduced to 18 years from 21 years in 1989 by the _____ Constitutional Amendment Act of _____.

(a) 61st; 1987
(b) 60th; 1988
(c) 61st; 1988
(d) 60th; 1989

Answer: (c)

37. Who among the following was sworn in as the 47th Chief Justice of India in November- 2019?

(a) Ranjan Gogoi
(b) N.V. Ramana
(c) R.F. Nariman
(d) Sharad Arvind Bobde

Answer: (d)

38. Who among the following is the first woman pilot of Indian Navy?

(a) Shivangi
(b) Padmavathy Bandopadhyay
(c) Priya Jhingan
(d) Divya Ajith Kumar

Answer: (a)

39. When was the Liberalized Exchange Managemer ystem involving dual exchange rates introduced?

(a) March 1994
(b) February 1994
(c) March 1992
(d) April 1992

Answer: (c)

40. Which of the following banks became the first bank in India to launch l 'Watch Banking' for Apple Watch?

(a) SBI
(b) RBI
(c) HDFC
(d) HSBC

Answer: (c)

General English

62. Choose the correct answer from the options given below:
Children feel more _____ with new technology than the elderly.

(a) able

(b) comfortable

(c) simple

(d) easy

Answer: (b)

63. Choose the correct answer from the options given below:
Gopal ran so fast that he was _____ for breath.

(a) mingling

(b) gasping

(c) inhaling

(d) exhaling

Answer: (b)

65. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.
(A)The elephant is the largest and the strongest of all the animals.
(B) It has thick legs, grey sides and back, big fan-like ears, great white tusks and a small tail.
(C)Unfortunately, in Africa, this powerful animal is hunted for its tusks, which yield valuable ivory.
(D) But the most peculiar thing about it is its long trunk which it puts to various uses.

(a) ABDC

(b) BCDA

(c) CDBA

(d) ADCB

Answer: (a)

66. Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.
(A) Somehow, she made two to three thousand rupees a month from her piano tuitions.
(B) Mrs. D'Souza was not too well off.
(C) Her situation became worse after the death of her husband.
(D) Her children were unwilling to take care of her.

(a) CABD

(b) BCAD

(c) DCBA

(d) DACB

Answer: (b)

67. The following sentence is divided into four parts. Identify the part which has an error in it.
Among the highly influential men / at the party / Mr. Shah remained / a centre of attention.

(a) Among the highly influential men

(b) at the party

(c) Mr. Shah remained

(d) a centre of attention.

Answer: (d)

68. The following sentence is divided into four parts. Identify the part which has an error in it.
I believe that / you should have / listened the advice / of your colleagues.

(a) I believe that

(b) you should have

(c) listened the advice

(d) of your colleagues.

Answer: (c)

69. Select the correct synonym for the word.
'Meadow'

(a) Structure

(b) Texture

(c) Mixture

(d) Pasture

Answer: (d)

70. Select the correct pair of meanings for [illegible] homonyms:
1. pane
2. pain

(a) 1. piece of glass 2. a writing instrument

(b) 1. a stamp paper 2. a throbbing

(c) 1. a piece of glass in a window 2. a feeling of discomfort

(d) 1. a peephole 2. Remote area

Answer: (c)

71. Select the option that can best substitute the following set of words:
A person whose belief is against the popular opinion

(a) Atheist

(b) Communist

(c) Heretic

(d) Socialist

Answer: (c)

72. Choose the correctly spelt word.
    (a) Perseverence
    (b) Preseverence
    (c) Perseverance
    (d) Persiverence
    Answer: (c)

73. Choose the misspelt word:
    (a) Inconspicuous
    (b) Extranious
    (c) Hideous
    (d) Miscellaneous
    Answer: (b)

76. The author is proud of his prize peach tree as:
    (a) it was looked after by the author himself
    (b) it had been visited by ants
    (c) it was growing against a warm wall
    (d) it had survived many winters
    Answer: (d)

77. We lived in dread of unpleasant insects like:
    (a) beetles
    (b) ants
    (c) wasps
    (d) butterflies
    Answer: (c)

78. Ants are famous for their:
    (a) fascinating lives
    (b) industriousness
    (c) ability to carry dead beetles
    (d) ability to pounce on flies
    Answer: (b)

80. Find the word which is an ANTONYM of the word ‘unsuccessful’.
    (a) Dispelling
    (b) Occasional
    (c) Triumphant
    (d) Fascinating
    Answer: (c)

Discipline1

102. Which of the following statements is NOT true about the Born-Haber cycle used to determine the electron affinity of an atom?

(a) Born-Haber cycle is a thermochemical cycle used to calculate the lattice energy of a compound of a metal with a non-metal.

(b) Born-Haber cycle is an application of Hess's law.

(c) Born-Haber cycle can also be used to determine whether the bonding in a compound in truly ionic.

(d) Born-Haber cycle is a thermochemical cycle used to calculate the lattice energy of a compound of a metal with a metal.

Answer: (d)

103. A zero angle of friction implies that:

(a) the frictional force is infinite

(b) the frictional force is zero

(c) the frictional force acts normal to the plane

(d) the frictional force acts along the direction of motion

Answer: (b)

108. As per Relativistic mechanics, if a stationary body explodes into fragments, each of mass 1 kg that move apart at speeds of 0.6c (c is speed of light) relative to the original body, then the mass of the original body is:

(a) 1.5 kg

(b) 2.5 kg

(c) 3.5 kg

(d) 4.5 kg

Answer: (b)

109. In a centre tap full wave single phase rectifier circuit, the number of diodes present is:

(a) 2

(b) 4

(c) 6

(d) 8

Answer: (a)

110. An amplifier has a voltage gain 80 and $\beta = 100$. The power gain of the amplifier is:

(a) 1.25

(b) 0.5

(c) 8000

(d) 8

Answer: (c)

113. The presence of a dispersion of small particles increases the strength of a material by an amount that depends on:

(a) the volume fraction of the particles

(b) the valency of the solute atoms

(c) the colour of the particles

(d) the viscoelastic deformation rate of the particles

Answer: (a)

114. The problem with carbon-carbon composites is that they oxidise and sublime in the presence of oxygen at temperatures in excess of:

(a) 600°C

(b) 700°C

(c) 800°C

(d) 900°C

Answer: (a)

115. Which of the following statements is NOT true about Finite Elements Method (FEM)?

(a) The method can be used only for regular-shaped domain.

(b) Domains consisting of more than one material can be easily analysed.

(c) Accuracy of the solution can be improved either by proper refinement of the mesh or by choosing approximation of higher degree polynomials.

(d) The algebraic equations in FEM, can be easily generated and solved on a computer.

Answer: (a)

117. Continuous-path Numerical Control (NC system) is another name for:

(a) point-to-point NC

(b) straight-cut NC

(c) contouring NC

(d) positioning NC

Answer: (c)

118. Which of the following wiring systems provides best fire protection?

(a) Cleat

(b) Wood casing

(c) TRS

(d) Conduit

Answer: (d)

119. If a building wiring consists of 20 points of 30-watt lamps and 4 fans of 70-watts each, determine the permissible insulation resistance to earth for a 220-volts system of supply.

(a) 0.42 MΩ

(b) 0.28 MΩ

(c) 0.12 MΩ

(d) 0.18 MΩ

Answer: (b)

120. The process of turning off a conducting thyristor is called:

(a) commutation

(b) rectification

(c) switching operation

(d) conduction

Answer: (a)

Discipline2

121. In voltage commutation scheme, a conducting thyristor is commutated by the application of a pulse of _____.

(a) large forward voltage

(b) reverse current

(c) large reverse voltage

(d) large forward current

Answer: (c)

122. Which of the following is a non-conventional energy source?

(a) Coal

(b) Biomass

(c) Nuclear fuel

(d) Diesel

Answer: (b)

123. Which of the following is the approxim rad on power from the sun?

(a) 5.1 × 1e26 W

(b) 3.8 × 1e24 W

(c) 3.8 × 1e26 W

(d) 5.1 × 1e24 W

Answer: (c)

124. The product of magnetic constant and relative permeability in a magnetic circuit is analogous to which of the following property in an electric circuit?

(a) Conductivity

(b) Resistivity

(c) Conductance

(d) Resistance

Answer: (a)

126. The Tarapur Power plant of NPCIL is situated in which State?

(a) Gujrat

(b) Tamil Nadu

(c) Maharashtra

(d) Rajasthan

Answer: (c)

127. The temperature of exhaust gas from a gas turbine is about:

(a) 873 K

(b) 1173 K

(c) 1073 K

(d) 973 K

Answer: (a)

128. The Sommerfeld number is _____ the radial clearance ratio.

(a) proportional to the square of

(b) proportional to

(c) inversely proportional to

(d) proportional to the exponential power of

Answer: (a)

129. What is the frictional torque acting on a material if the frictional load is 350N and the radius is 0.2m?

(a) 70 Nm

(b) 1750 Nm

(c) 350 Nm

(d) 0.2 Nm

Answer: (a)

130. As per the cylinder arrangement, V-8 engine IC engine has:

(a) two blocks inclined at 90° to each other and each block has four cylinders

(b) two blocks inclined at 45° to each other and each block has four cylinders

(c) four blocks inclined at 90° to each other and each block has two cylinders

(d) four blocks inclined at 45° to each other and each block has two cylinders

Answer: (a)

131. For combustion in spark ignition engine, the crank angle interval between the spark discharge and the time, when a small but significant fraction of the cylinder mass has burned, is known as:

(a) flame-development angle

(b) rapid-burning angle

(c) overall burning angle

(d) ignition limit

Answer: (a)

132. For a fixed support, the total number of reactions are:

(a) three force components and one couple

(b) three force components and two couples

(c) three force components and three couples

(d) two force components and three couples

Answer: (c)

134. A manual process in which the material is removed selectively in small amounts, usually to give a flat or a good bearing surface to workpiece, is called:

(a) filing
(b) chiselling
(c) scraping
(d) hammering

Answer: (c)

135. Which of the following surface finishing processes provides surfaces with minimum value of Roughness average(R) ? a

(a) Lapping
(b) Broaching
(c) Die-casting
(d) Reaming

Answer: (a)

136. Which of the following statements is false about laser beam machining?

(a) It can machine through holes.
(b) It can machine hard and abrasive particles.
(c) In laser machining there is no physical tool.
(d) It's a very efficient process.

Answer: (d)

137. Which of the following materials has the maxim melting point?

(a) Mild steel
(b) Grey iron
(c) Copper
(d) Gold

Answer: (a)

138. The process in which the film of aluminium oxide is artificially thickened by an electrolytic process on aluminium and its alloys is called:

(a) anodising
(b) electroplating
(c) plasma electrolytic oxidation
(d) chemical blacking

Answer: (a)

139. Which of the following gauges has a sliding contact with a resistive element?

(a) Strain gauge
(b) Potentiometer
(c) Linear variable differential transformer
(d) Gauge Block

Answer: (b)

140. What is the application of an oscillator in an electronic comparator?

(a) Conversion of mechanical signals into electrical signals

(b) Display the output

(c) Removal of external carrier wave frequency

(d) Increase the amplitude of the incoming signals

Answer: (d)

Discipline3

141. Which of the following motors is usually used in open loop control systems?

(a) AC Servo motor

(b) DC Servo motor

(c) Brushless DC motor

(d) Stepper motor

Answer: (d)

143. Of the following, which is the application of Third inversion of a double slider–crank chain mechanism (obtained by fixing link 3 of first inversion and allowing link 1 to move freely)?

(a) Oscillating cylinder engine

(b) Oldham's coupling

(c) Elliptical trammel

(d) Scotch yoke

Answer: (b)

144. Any state of a system is represented i ther dynamic property diagram by a:

(a) point

(b) solid line

(c) dashed line

(d) cycle

Answer: (a)

145. Which type of scale is used in a moving coil meter?

(a) Linear

(b) Non-linear

(c) Square law scale

(d) Triangle law scale

Answer: (a)

146. Which of the following thing can never be exactly similar in moving iron and PMMC instruments?

(a) Pointer

(b) Terminal size

(c) Scale

(d) Scale range

Answer: (c)

147. The capacitance of an underground cable _____ if the length of the cable is halved.

(a) is halved

(b) is doubled

(c) remains unchanged

(d) is quadrupled

Answer: (a)

148. Four identical alternators rated at 11 kV, 30 MVA are connected in parallel. Find the short circuit MVA at the terminal if sub-transient reactance of each alternator is 20%.

(a) 300

(b) 500

(c) 400

(d) 600

Answer: (d)

149. A single-phase transmission line has two parallel conductors 5 metres apart. If the length of the line is 100 km, then calculate capacitance of the line per km. Given, diameter of each conductor is 2 cm and ε = 8·854 × 10−12 F/m.
0

(a) (2.78)/loge500 μF

(b) (2.78)/loge400 μF

(c) (5.78)/loge400 μF

(d) (5.78)/loge500 μF

Answer: (a)

150. For a DC high potential test, the voltage [illegible] across the winding is:

(a) VDC-Hipot = 2 × Operating Voltage + 1000 V

(b) VDC-Hipot = 4 × Operating Voltage + 1000 V

(c) VDC-Hipot = 2 × Operating Voltage + 5000 V

(d) VDC-Hipot = 4 × Operating Voltage + 5000 V

Answer: (a)

151. The symptom is, 'contacts flash from one to the other, trouble is circuit breaker opens when underloaded, when provided with undervoltage coil, and none of the foregoing defects is apparent'. The cause of this symptom is:

(a) overheating

(b) single phase operation

(c) barriers are broken

(d) one arm not making contact

Answer: (c)

152. In an 8085 microprocessor's flag register, how many one-bit flags are there?

(a) 4
(b) 5
(c) 3
(d) 6

Answer: (b)

153. What effect does "shift left" operation have on a binary number when shifted once only?

(a) Number is incremented by 2
(b) Number is decremented by 2
(c) Number is divided by 2
(d) Number is multiplied by 2

Answer: (d)

154. Which type of drive motor is used in a large rice mill?

(a) DC shunt motor
(b) Slip-ring induction motor
(c) Synchronous motor
(d) Squirrel-cage induction motor

Answer: (d)

155. Which of the following power plants requires min m quantity of fuel?

(a) Thermal power plant
(b) Hydroelectric plant
(c) Nuclear power plant
(d) Diesel plant

Answer: (c)

156. Which of the following converts mechanical energy into electrical energy?

(a) Fuse
(b) Alternator
(c) Relay
(d) Circuit breaker

Answer: (b)

157. Hydro-electric power stations utilise _____ for the generation of electrical energy.

(a) potential energy of water
(b) kinetic energy of water
(c) both potential and kinetic energy of water
(d) steam energy

Answer: (a)

158. BWR and PWR are components related to which power station?

(a) Nuclear power station

(b) Thermal power station

(c) Hydroelectric power station

(d) Gas turbine power station

Answer: (a)

159. Which of the following components of costing comes under indirect cost of a product?

(a) Cost of raw materials

(b) Repair and maintenance cost

(c) Cost of labour

(d) Cost of equipment

Answer: (b)

160. If a part is made from aluminium which costs ₹150/kg and weighs 2 kg, the estimated material cost considering 10% allowances for scrap and 10% allowances for tooling is:

(a) ₹300

(b) ₹360

(c) ₹400

(d) ₹460

Answer: (b)

Discipline4

161. In an ideal vapor-compression refriger[illegible] cycle, the process during which heat is absorbed from cold space is a _____ process.

(a) isochoric

(b) isobaric

(c) isopycnic

(d) adiabatic

Answer: (b)

162. As per ANSI/ASHRAE 34-2019, Designation and Safety Classification of Refrigerants nomenclature, the 'R' number for nitrogen is:

(a) 728

(b) 717

(c) 718

(d) 702

Answer: (a)

163. Double fed induction generators used in wind power plants have overcome the following problem of conventional induction generators:

(a) generating power when the wind speed is very low
(b) generating power when the wind speed is very high
(c) providing reactive power for excitation
(d) providing peak load power

Answer: (c)

164. An induction motor acts as an generator when its speed is:

(a) more than synchronous speed
(b) between zero and synchronous speed
(c) below zero, i.e., negative
(d) nearly half the synchronous speed

Answer: (a)

165. Which of the following will NOT cause a motor to reverse?

(a) Changing the phase sequence of supply to a three-phase induction motor
(b) Interchanging the supply lines of a single-phase induction motor
(c) Reversing the connections of both the armature and field winding of DC motor
(d) Reversing the connection of either the armature or field winding of DC motor

Answer: (c)

166. The ability to do error-free calculations represe the _____ characteristic of the computer.

(a) Scalability
(b) Accuracy
(c) Speed
(d) No IQ

Answer: (b)

167. Which of the following time periods is associated with the second generation of computers?

(a) 1956-1963
(b) 1940-1956
(c) 1964-1971
(d) 1930-1939

Answer: (a)

168. Which of the following is NOT a translator program?

(a) Loader
(b) Compiler
(c) Assembler
(d) Interpreter

Answer: (a)

169. Which of the following statements with reference to arrays in C is FALSE?

(a) C supports multidimensional arrays.

(b) C will not allow a function to return an array.

(c) C allows to generate a pointer to the first element of an array.

(d) C allows to pass a pointer to a function.

Answer: (b)

170. Which of the following is the treatment of ore for aluminium metal extraction?

(a) Roasted and treated with sulphuric acid

(b) Roasted and treated with formic acid

(c) Roasted and treated with nitric acid

(d) Roasted and treated with acetic acid

Answer: (a)

171. Copper metal can be extracted from which of the following solutions?

(a) Fused cryolite

(b) Copper sulphate

(c) Fused magnesium chloride

(d) Fused sodium hydrate

Answer: (b)

172. A train service consists of the following.
Uniform acceleration of 4 km/h/sec for 30 seconds f owed by free running for 10 minutes, then uniform braking at 4 km/h/sec to stop followed by a op of 5 minutes. The maximum speed and time for retardation are 120 km/h and 30 sr esp vely. Calculate the distance between the stations.

(a) 25 km

(b) 21 km

(c) 27 km

(d) 28 km

Answer: (b)

173. The best transducer for measuring the displacements of the order of micrometers is:

(a) Linear Variable Differential Transformer

(b) Strain Gauge

(c) Piezoelectric Transducer

(d) Ultrasonic Transducer

Answer: (c)

175. Instrumentation amplifiers are designed for:

(a) differential amplification

(b) cumulative amplification

(c) differential attenuation

(d) cumulative attenuation

Answer: (d)

177. The _____ relay is an over-current relay with directional restraint.

(a) impedance

(b) reactance

(c) Mho

(d) Buchholz

Answer: (b)

179. Which of the following is NOT a motivation theory?

(a) Maslow's Need Hierarchy Theory

(b) Herzberg's Two-Factor Theory

(c) McGregor's Theory X and Theory Y

(d) Six Sigma

Answer: (d)

180. In the context of trade unions, which of the following statements is INCORRECT?

(a) A trade union is a voluntary association and no person can be compelled to join the union.

(b) A trade union is a temporary body and it can be dissolved when not necessary.

(c) A trade union looks after job security and better working environment.

(d) In case of any grievances, the trade union intervenes to sort out the issue of the employee concerned.

Answer: (b)

Discipline5

181. Which of the following is NOT a princi[illegible]f to[illegible]quality management (TQM)?

(a) Customer-focused

(b) Process-centred

(c) Product-centred

(d) Fact-based decision making

Answer: (c)

182. With respect to management levels, which of the following positions belongs to middle management?

(a) Executive director

(b) Labour officer

(c) Sales officer

(d) Finance officer

Answer: (b)

185. Millman's theorem is applicable when the circuit comprises of:

(a) practical current sources connected in parallel

(b) practical current sources connected in series

(c) ideal current sources connected in parallel

(d) ideal current sources connected in series

Answer: (b)

186. At the cut-off frequency of a filter, its attenuation drops to:

(a) Zero

(b) –3 dB

(c) 20 dB

(d) –20 dB

Answer: (b)

187. The term 'ω' in the complex frequency variable s for defining the Laplace transform is:

(a) real

(b) imaginary

(c) complex

(d) polar

Answer: (a)

188. To draw a line at 15° to the horizontal, which of the following drawing instruments is most useful?

(a) T-square

(b) Mini drafter

(c) Set square

(d) compass

Answer: (b)

189. Which of the following drawing instruments is m . useful to draw curved lines?

(a) French curve

(b) Large-size divider

(c) Set square

(d) Mini drafter

Answer: (a)

190. With reference to tolerancing, which of the following statements is INCORRECT?

(a) It is the total amount by which a dimension may vary.

(b) It is the difference between the upper limit and the lower limit.

(c) It is used to control the amount of variations of all the manufactured parts.

(d) It is not useful in production drawing.

Answer: (d)

191. Which of the following pencil grade is the hardest?

(a) H

(b) HB

(c) 7B

(d) 9H

Answer: (d)

192. What is the ratio of the drawing size to the actual size of an object called?

(a) Representative Fraction

(b) Scale ratio

(c) Reduced fraction

(d) Object ratio

Answer: (a)

193. A steady, 2d incompressible flow is represented by the following equations. Find the stagnation point. u = x - 2y + 2; v = x - y - 5

(a) (12, 7)

(b) (−12, 7)

(c) (12, −7)

(d) (−12, −7)

Answer: (a)

194. Which of the following statements is INCORRECT?

(a) Heat transfer is transmission of energy from one region to another as a result of temperature gradient.

(b) Heat flows in the direction of lower temperature.

(c) Conduction is transfer of heat within fluid by mixing one portion with another.

(d) Radiation refers to transfer of heat through space or matter.

Answer: (c)

198. In a shell-type transformer, the low voltage and high voltage windings wound over the central limb are interleaved in order to:

(a) reduce leakage flux

(b) reduce eddy current loss

(c) reduce hysteresis loss

(d) reduce mutual induction

Answer: (a)

199. If n = 20, σ =2.5, σ =1.5 and sum of the products of the deviations from the mean of x and y is 50, then the correlation coefficient is: x y

(a) 2/3

(b) 1/2

(c) 1/4

(d) 1/3

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.

Mental Ability

1	**(b)**	2	**(c)**	3	**(a)**	4	**(c)**	5	**(d)**	6	**(d)**	7	**(b)**	8	**(c)**
9	**(d)**	10	**(b)**	11	**(a)**	12	**(b)**	15	**(b)**						

General Awareness

21	**(d)**	22	**(c)**	23	**(d)**	24	**(c)**	25	**(c)**	26	**(b)**	27	**(b)**	28	**(c)**
29	**(d)**	30	**(a)**	31	**(c)**	32	**(b)**	33	**(c)**	34	**(b)**	35	**(a)**	36	**(c)**
37	**(d)**	38	**(a)**	39	**(c)**	40	**(c)**								

General English

62	**(b)**	63	**(b)**	65	**(a)**	66	**(b)**	67	**(d)**	68	**(c)**	69	**(d)**	70	**(c)**
71	**(c)**	72	**(c)**	73	**(b)**	76	**(d)**	77	**(c)**	78	**(b)**	80	**(c)**		

Discipline1

102	**(d)**	103	**(b)**	108	**(b)**	109	**(a)**	110	**(c)**	113	**(a)**	114	**(a)**	115	**(a)**
117	**(c)**	118	**(d)**	119	**(b)**	120	**(a)**								

Discipline2

121	**(c)**	122	**(b)**	123	**(c)**	124	**(a)**	[illegible]	**(c)**	127	**(a)**	128	**(a)**	129	**(a)**
130	**(a)**	131	**(a)**	132	**(c)**	134	[illegible]	[illegible]	**(a)**	136	**(d)**	137	**(a)**	138	**(a)**
139	**(b)**	140	**(d)**												

Discipline3

141	**(d)**	143	**(b)**	144	**(a)**	145	**(a)**	146	**(c)**	147	**(a)**	148	**(d)**	149	**(a)**
150	**(a)**	151	**(c)**	152	**(b)**	153	**(d)**	154	**(d)**	155	**(c)**	156	**(b)**	157	**(a)**
158	**(a)**	159	**(b)**	160	**(b)**										

Discipline4

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

Discipline5

181	**(c)**	182	**(b)**	185	**(b)**	186	**(b)**	187	**(a)**	188	**(b)**	189	**(a)**	190	**(d)**
191	**(d)**	192	**(a)**	193	**(a)**	194	**(c)**	198	**(a)**	199	**(a)**				