PREVIOUS YEAR PAPER

DSSSB Technical Assistant (Medical Electronics) 2021 — 16 November 2021, Shift 2

DSSSB Other Posts · 16 November 2021 · Shift 2

164 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: 36 (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 16 November 2021, 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-2021-technical-assistant-medical-electronics-16-nov-shift-2/

General Ability

1. Dattaram, Ramesh, Guru, Priyanka and Suchita have different heights. Dattaram is taller than Priyanka but shorter than Ramesh. Suchita is not the tallest. Only one person is shorter than Priyanka. Who among them is the tallest?

(a) Guru
(b) Ramesh
(c) Dattaram
(d) Priyanka

Answer: (a)

2. There are 6 sisters, A, B, C, D, E and F. F is 12 ye[illegible] old. In 12 years, B will be 8 times as old as she was 2 years ago. What is the age diffe[illegible]ween F and B?

(a) 8 years
(b) 6 years
(c) 4 years
(d) 2 years

Answer: (a)

3. I is shorter than J. F is taller than G. J is taller than F. H is shorter than G. K is as tall as I. Who is the tallest among all?

(a) I
(b) J
(c) F
(d) H

Answer: (b)

4. A, B, C, D, E, F, G, H, I and J stay in a building with 8 floors. The ground floor is numbered as zero and the floor above it is numbered as 1 and so on, till the top floor is numbered as 7.
D stays on the ground floor. E and B stay together on an even numbered floor. F and G stay together on an odd numbered floor. H stays on the floor numbered 7. A stays on the floor numbered 2. C stays on the floor that is immediately above the floor on which A stays.
I stays on the floor that is immediately above the floor on which C stays. J stays on the floor that is immediately above the floor on which I stays.
On which floor do F and G stay?

(a) 5

(b) 4

(c) 1

(d) 3

Answer: (c)

5. Study the given information carefully and answer the question that follows.
For the recruitment process of an institution to fill up the post of an HR Manager, candidates need to satisfy the following criteria.
The candidate must:
(i) be a Post-Graduate in Business Administration/a PG Diploma holder in Human Resource Management (HRM) with at least 60% marks.
(ii) have secured at least 55% marks in graduation.
(iii) be at least 30 years old as on 02.04.2021.
(iv) have a work experience of at least 5 years in the HR Division of an organisation.
(v) have secured at least 50% marks in the selection process.
Based on the above information, decide whether the following candidate is eligible for the recruitment process and select your answer from the given options. You should not assume anything other than the information provided.
Rajan Choudhary has acquired his Post-Graduate Diploma in HRM with 65% marks and has secured 56% marks in his graduation. He was born on 22 March 1989 and has been working in the HR Division of an organisation for the past 5 years. He attained 54% marks in the selection process.
(A) He should be rejected as he does not fulfil the educational qualification criterion.
(B) He should be selected as he meets all the criteria.
(C) He should be rejected as the requisite experience is not met.
(D) He should be rejected as he does not fulfil the age criterion.
(E) He has missed filling the required data.

(a) E

(b) C

(c) B

(d) A

Answer: (c)

7. The given statement is followed by two conclusions, numbered I and II. Decide which of the given conclusions is/are true based on the given statement.
Statement:
A < E = F < M < P = S
Conclusions:
I. F < S
II. E > S

(a) Only conclusion I
(b) Only conclusion II
(c) Both conclusions I and II
(d) Neither conclusion I nor II

Answer: (a)

8. The given statement is followed by two conclusions, numbered I and II. Decide which of the given conclusions is/are true based on the given statement.
Statement:
T = S > Q = U ≠ P = R
Conclusions:
I. U < S
II. U > T

(a) Only conclusion I
(b) Only conclusion II
(c) Both conclusions I and II
(d) Neither conclusion I nor II

Answer: (a)

9. A man surrounded by a beautiful view of the mountains is facing west. He turns 45° anticlockwise for a better view. He then turns 90° clockwise.
After having a good look at the view, he turns 180° clockwise. Which direction is he facing now?

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

Answer: (c)

10. X and Y are the children of Z. If Z is the mother of Y, but X is not the daughter of Z, then what is the relation between Z and X?

(a) Mother and son
(b) Brother and sister
(c) Nephew and aunt
(d) Niece and aunt

Answer: (a)

11. In a national-level vocal competition on the occasion of a new year, a total of 75 children took part. Sumana's position was 13th from the top, and Basanti stood 25th from the bottom. A total of how many participants stood between Sumana and Basanti?

(a) 42

(b) 30

(c) 45

(d) 37

Answer: (d)

12. In a building, each floor is joined with two stairs. There are a total of 8 floors in this building, starting from the ground floor numbered as 1, the floor above it numbered 2 and so on till 8. There are three lifts, A, B and C, installed in the building.
A goes only from the ground floor to the 3rd floor.
B goes only from the ground floor to the 5th floor.
C goes only from the ground floor to the 8th floor.
If a person would like to go to the 4th floor and takes lift B,how many minimum staircases will he have to take to reach the 4th floor after getting down from the lift?

(a) 4

(b) 8

(c) 6

(d) 2

Answer: (d)

13. R, Q, P, O, N and M stay in the same building whe[illegible]he ground floor is numbered 6, the floor above it is numbered 5 and so on till the top most fl[illegible] is numbered 1.
P, Q and R stay on alternate floors starting [illegible] th[illegible]round floor. O stays on the floor that is immediately above the floor on which P stays. [illegible]ys on the floor that is immediately below the floor on which R stays. On which floor does N stay?

(a) 3

(b) 2

(c) 1

(d) 4

Answer: (c)

15. In a certain code language, 'A – B' means 'A is the brother of B', 'A × B' means 'A is the wife of B', 'A ÷ B' means 'A is the father of B'.
Based on this information, if 'P ÷ Q – R × S', then which of the following is TRUE?

(a) P is the father of S

(b) R is the sister of Q

(c) R is the son of P

(d) S is the brother of Q

Answer: (b)

16. Sagar and Milind met each other at a local store and were standing face to face around sunset. If Sagar's shadow falls towards his left, which direction is Milind facing?

(a) North

(b) West

(c) South

(d) East

Answer: (a)

17. Som is facing north. He turns 90° anticlockwise and walks for 20 metres. He then turns right and walks for 100 metres. He turns left and walks for 12 metres, after which he turns left and walks again for 100 metres. He finally turns right and walks for another 30 metres and stops walking.
He realizes that, after turning 90° anticlockwise, had he walked straight, he would have reached the same place by walking lesser distance. How many metres would he have walked had he continued walking straight after turning around 90° anticlockwise?

(a) 75 metres

(b) 62 metres

(c) 262 metres

(d) 100 metres

Answer: (b)

18. In a group of 21 players, standing in increasing order of height, Joseph's position is 9th from the start. What is his position from the end?

(a) 11

(b) 10th

(c) 13th

(d) 12th

Answer: (c)

19. If 'A * Z' means 'A is greater than Z', 'A # Z' means 'A is equal to Z', 'A + Z' means 'A is less than or equal to Z', 'A – Z' means 'A is neither greater than nor equal to Z', then which of the following conclusions is/are CORRECT according to the given expression?
'A # Z + Y – W * X # V'
Conclusions:
I. A < W
II. V > W

(a) Only conclusion I

(b) Only conclusion II

(c) Both conclusions I and II

(d) Neither conclusionI nor II

Answer: (a)

General Awareness

21. Facebook has changed its corporate name to _____ as in October 2021.

(a) Beta
(b) Meta
(c) Theta
(d) Feta

Answer: (b)

22. What is the name of surface-to-surface ballistic missile which was successfully test-fired by the India in Oct 2021?

(a) Agni-7
(b) Agni-3
(c) Agni-5
(d) Agni-9

Answer: (c)

23. Where was India's first e-waste clinic set up in 2019?

(a) Bhopal
(b) Bengaluru
(c) Ahmedabad
(d) Mumbai

Answer: (a)

24. The Kerala High Court had ruled that the right to ...e access to the Internet is part of the fundamental Right to Education (RTE) & also the Ri... ...o Privacy under Article _____ of the Constitution.

(a) 25
(b) 21
(c) 243
(d) 345

Answer: (b)

25. Which position was clinched by the Jammu & Kashmir team for deaf in World Deaf Judo Championship held at Paris Versailles, France?

(a) First
(b) Second
(c) Third
(d) Fourth

Answer: (a)

26. Tulsidas, Chaitanya, Surdas and Meera were the main saints of which form of Bhakti?

(a) Nirguna
(b) Saguna
(c) Alvars
(d) Nalayira

Answer: (b)

27. Rani Laxmibai married the Maharaja of Jhansi in 1842, what was his name?

(a) Anand Rao
(b) Moropant Rao
(c) Damodar Rao
(d) Gangadhar Rao Newalkar

Answer: (d)

28. The second Anglo-Sikh war was fought between which time period?

(a) 1850 to 1852
(b) 1842 to 1843
(c) 1848 to 1849
(d) 1819 to 1821

Answer: (c)

29. Which of the following is NOT one of the 3 kinds of temple architecture?

(a) Kandariya Style
(b) Nagara Style
(c) Dravida Style
(d) Vesar Style

Answer: (a)

30. Jata-Jatin and Bakho-Bakhain are the folk dances which of the following states?

(a) Haryana
(b) Bihar
(c) Uttar Pradesh
(d) Jharkhand

Answer: (b)

31. Shigmo Festival is widely celebrated for 14 days during the onset of spring in which of the following the state?

(a) Odisha
(b) Manipur
(c) Goa
(d) Assam

Answer: (c)

32. The study of central issues like Employment, GDP and Inflation are dealth in which of the following?
1. Microeconomcs
2. Macroecononomics

(a) Only 1
(b) Only 2
(c) Both 1 and 2
(d) Neither 1 nor 2

Answer: (b)

33. Which of the following is NOT one of the effects of inflation?

(a) Decrease in the value of the currency

(b) Increase interest rate in loans

(c) Decreasing real returns on savings

(d) Increasing literacy rate

Answer: (d)

34. Khasi Hills are a part of Garo-Khasi Range in _____.

(a) Assam

(b) Meghalaya

(c) Manipur

(d) Odisha

Answer: (b)

35. The Census 2011 was the _____ national census survey conducted by the Census Organization of India.

(a) Fifteenth

(b) Tenth

(c) Thirteenth

(d) Sixteenth

Answer: (a)

36. India has around what percent of world's renewa water resources?

(a) 12%

(b) 14%

(c) 4%

(d) 7%

Answer: (c)

37. Water remains cool in an earthern pitcher due to the process of _____.

(a) Condensation

(b) Evaporation

(c) Precipitation

(d) Assimilation

Answer: (b)

38. If an organism can nourish itself by making its own food using sunlight or chemicals such mode of nutrition is called as _____ nutrition.

(a) Holozoic

(b) Heterotrophic

(c) Autotrophic

(d) Parasitic

Answer: (c)

39. Part IX B of the Indian Constitution deals with _____.

(a) Union

(b) Panchayats

(c) Cooperative Societies

(d) Tribunals

Answer: (c)

40. Which of the following is NOT one of the functions of a state government in India?

(a) Promote Welfare of the people

(b) Make laws for the state.

(c) Form policies and laws to govern the nation.

(d) Maintenance of the state economy.

Answer: (c)

Arithmetic Ability

41. What is the value of 8.09 + 8.009 + 8.0009 + 8.0900?

(a) 32.1899

(b) 33.1897

(c) 40.9910

(d) 35.0179

Answer: (a)

42. Which among the following can be the sum of t numbers if the LCM and HCF of those numbers be 260 and 13, respectively?

(a) 156

(b) 130

(c) 117

(d) 286

Answer: (c)

44. If 685×96y4 is an eight digit number which is divisible by 36, then what will be minimum the value of (x + y)/2?

(a) 4.5

(b) 1.5

(c) 2.5

(d) 3.5

Answer: (d)

45. The price of a headphone and a speaker is in the ratio 4 : 9. If the price of the headphone be increased by 12.5% and the price of the speaker be increased by ₹ 150, then the ratio of their prices is still the same. The original price of the speaker is

(a) ₹ 1110

(b) ₹ 1200

(c) ₹ 1210

(d) ₹ 1300

Answer: (b)

46. Dev sold two speakers at the same price. On first speaker he gained 15% profit while on the other speaker he had a loss of 60%. If the difference between the cost price of both the speakers is ₹ 6600, then find the selling price of each speaker.

(a) ₹ 5048

(b) ₹ 2048

(c) ₹ 3048

(d) ₹ 4048

Answer: (d)

48. Rudra invested ₹ 2250 at simple interest at ₹ r% p.a. and ₹ 3750 at simple interest of (r + 15)% p.a. . If the total amount received by him at the end of 3 years is ₹ 9480, then the value of 'r' is (Correct to one decimal place)

(a) 15%

(b) 14%

(c) 10%

(d) 7%

Answer: (c)

49. Simple Interest and Compound Interest (compounded annually) earned on a sum at the end of 2 years at a certain rate of interest p.a. is ₹ 3904 and ₹ 4880 respectively. Find the rate of interest.

(a) 50%

(b) 53%

(c) 56%

(d) 55%

Answer: (a)

50. Romita and Somita left a place named 'K' with different speeds which are in the ratio 4 : 5, respectively. Romita started 45 seconds after Somita.
If after 90 seconds of the departure of Somita, Romita is 150 metres apart from Somita, then find the speed of Somita.

(a) 12 km/h

(b) 10 km/h

(c) 20 km/h

(d) 15 km/h

Answer: (b)

51. Varun and Shanu can complete a work in 24 days while Varun, Shanu and Rohnak together can complete the same work in 18 days. If Shanu is 25% more efficient than Rohnak, then find the time taken by Shanu to complete 37.5% of the same work.

(a) 30.5 days

(b) 23.75 days

(c) 43.7 days

(d) 21.6 days

Answer: (d)

52. The average cost of some glasses is ₹ 5300 while the average cost of some bowls is ₹ 3800. If the average cost of all the items (glasses and bowls) is ₹ 4500, then find the percentage (approximate) of number of glasses out of the total items.

(a) 42.08%

(b) 50%

(c) 46.67%

(d) 43%

Answer: (c)

53. The sum of length and breadth of a rectangle is 36 cm. If the sum of the perimeters of a square and the rectangle is 128 cm, then what will be the area of the square

(a) 195 square cm

(b) 196 square cm

(c) 198 square cm

(d) 199 square cm

Answer: (b)

56. A solid rectangular metallic box, which is 36 cm long, 12 cm broad and 4 cm high is melted and recast into a cube. The difference between the total surface areas of the two solids is:

(a) 294 square cm

(b) 384 square cm

(c) 380 square cm

(d) 394 square cm

Answer: (b)

General English

61. Fill up the blank with appropriate preposition.
Manav has to answer _____ his misdeeds.

(a) to

(b) for

(c) of

(d) on

Answer: (b)

62. Fill in the blank with the CORRECT option.
We _____ to Bangalore by bus today.

(a) will gone
(b) will be going
(c) would going
(d) should going

Answer: (b)

63. Identify the CORRECT tense that has been used in the following sentence.
Ravi has known me for two years.

(a) Present Perfect Tense
(b) Present Continuous Tense
(c) Present Perfect Continuous Tense
(d) Simple Present Tense

Answer: (a)

64. Fill in the blank with the CORRECT option.
Her uncle advised her to lodge _____ F.I.R. in the police station immediately.

(a) a
(b) an
(c) the
(d) No article is required

Answer: (b)

65. Fill in the blank with the suitable phrasal verb from the options given below.
The three wise men _____ to meet and bless the infant Jesus.

(a) set in
(b) set about
(c) set back
(d) set forth

Answer: (d)

66. Fill in the blank with the CORRECT collocation.
Please _____ to go around and take a look at the paintings.

(a) take free
(b) feel free
(c) come free
(d) go free

Answer: (b)

67. Suggest the correct SYNONYM of the word 'insolent' in the sentence from the given options.
The boy was known for his insolent behaviour.

(a) disrespectful

(b) violent

(c) cunning

(d) frivolous

Answer: (a)

68. Select the meaning of the given idiom.
'as fit as a fiddle'

(a) to be strong and healthy

(b) to behave in an intelligent manner

(c) to be fit to play a fiddle (a musical instrument)

(d) to fiddle with something continuously

Answer: (a)

69. Complete the given proverb with the CORRECT option.
A _____ gathers no moss.

(a) broken stone

(b) heavy stone

(c) rolling stone

(d) shining stone

Answer: (c)

70. Select the sentence part which has an error in spelling. If there is no error, select Option No Error.
We were amazed to notice / layers of poreous limestones / in the adjoining field during our expedition. / No error

(a) We were amazed to notice

(b) layers of poreous limestones

(c) in the adjoining field during our expedition.

(d) No error

Answer: (b)

71. Select the grammatically CORRECT sentence from the given options.

(a) The ebb and flow of the tides are of great interest to me.

(b) One of my brothers are rich.

(c) My brother-in-law with his wife is present at the function.

(d) Either Sohan or his friends is responsible for the crime.

Answer: (c)

72. Fill in the blank with the most appropriate word as per the context of the sentence.
My knowledge of Chemistry is _____.

(a) economical
(b) exhausting
(c) elemental
(d) elementary

Answer: (d)

73. Fill in the blanks with the CORRECT option.
_____ rich should help _____ poor.

(a) The; no article required
(b) No article required; the
(c) The; the
(d) No article required in both the blanks

Answer: (c)

74. Fill in the blank with the suitable phrasal verb from the options given below.
The thieves _____ with a box full of jewellery.

(a) got on
(b) got over
(c) got away
(d) got at

Answer: (c)

75. Complete the given proverb with the CORRECT option.
A fool and _____ are soon parted.

(a) his family
(b) his friends
(c) his money
(d) his ideas

Answer: (c)

76. The narrator wanted to interview Rahul Dravid because _____.

(a) he was a cricket fan
(b) he was writing a book
(c) he admired Dravid
(d) he wanted to know about other cricketers from Dravid

Answer: (b)

Discipline1

101. The _____ organelles in a cell are called as power houses of the cell.

(a) ribosomes
(b) mitochondria
(c) choloroplasts
(d) golgi apparatus

Answer: (b)

102. Each action potential in the heart originates at the _____.

(a) AV node
(b) SA node
(c) Bundle of His
(d) Purkinjee fibres

Answer: (b)

103. Cell bodies and small fibres in front/fore brain are _____ in colour.

(a) White
(b) Black
(c) Grey
(d) Red

Answer: (c)

104. The percentage of oxygen present in alveolar air _____.

(a) 21%
(b) 14%
(c) 5.5%
(d) 79%

Answer: (b)

105. About _____ of the body is skeletal muscle and another 10% is smooth and cardiac muscle.

(a) 50%
(b) 30%
(c) 40%
(d) 42%

Answer: (c)

106. When measured orally the human body temperature is _____.

(a) 98.6° F
(b) 93.6° F
(c) 92.8° F
(d) 95.4° F

Answer: (a)

107. The two ovarian hormones are namely the estrogen and the _____.

(a) FSH
(b) GnRH
(c) Cortisol
(d) Progesterone

Answer: (d)

108. The _____ wavelength and extremely high energy properties of X rays enable it to penetrate through materials which readily absorb and reflect visible light.

(a) long
(b) medium
(c) short
(d) very long

Answer: (c)

109. In the CT scale used in computer tomography air is assigned with a value of _____.

(a) 100
(b) 0
(c) + 1000
(d) - 1000

Answer: (d)

110. The velocity of ultrasound in human soft tissue i _____.

(a) 1640 m/sec
(b) 1540 m/sec
(c) 2540 m/sec
(d) 1280 m/sec

Answer: (b)

111. The atrial triggered pacemaker is a _____ triggered pacemaker

(a) R wave
(b) P wave
(c) QRS wave
(d) T wave

Answer: (a)

112. The term _____ refers to a superficial tissue destruction without affecting deep seated tissues.

(a) dessication
(b) coagulation
(c) cutting
(d) fulguration

Answer: (d)

113. In a colorimeter the sample is normally a _____.

(a) liquid

(b) solid

(c) gas

(d) solid liquid mixture

Answer: (a)

114. The Lead II position gives the voltage drop from left leg (LL) to the _____.

(a) V2 chest position

(b) V1 chest position

(c) right arm

(d) right leg

Answer: (c)

115. The frequency range of EEG signals is _____.

(a) 0.1 to 100 Hz

(b) 0.1 to 10 Hz

(c) 0.01 to 100 Hz

(d) 10 to 100 Hz

Answer: (a)

116. The frequency range of Alpha brain waves is ___ __.

(a) 8 – 13 Hz

(b) 13 – 30 Hz

(c) 4 – 13 Hz

(d) 0.5 – 4 Hz

Answer: (a)

117. _____ is the science of recording and interpreting the electrical activityof muscles action potential

(a) Electrocardiography

(b) Electrooculography

(c) Electrogastrography

(d) Electromyography

Answer: (d)

118. The frequency range of EMG signals is _____.

(a) 5 to 3000 Hz

(b) 5 to 2000 Hz

(c) 5 to 4000 Hz

(d) 5 to 5000 Hz

Answer: (b)

119. Epilepsy is a symptom for _____ damage.

(a) Brain

(b) Nerve

(c) muscle

(d) Heart

Answer: (a)

120. The duration of P-R interval in an ECG waveform is _____.

(a) 0.12 to 0.50 sec

(b) 0.12 to 0.20 sec

(c) 0.32 to 1.20 sec

(d) 0.12 to 0.20 mins

Answer: (b)

Discipline2

121. The value of resting potential in nerve and muscle cells is between _____ to _____.

(a) – 60 mV; – 160 mV

(b) – 60 mV; + 100 mV

(c) – 60 mV; – 100 mV

(d) – 60 mV; – 110 mV

Answer: (c)

122. Which among the following electrodes is NOT used for EEG recording?

(a) Scalp surface electrode

(b) Ear clip electrode

(c) Needle electrodes

(d) Suction cup electrodes

Answer: (d)

123. EEG electrodes measure voltage differences at the scalp which is in the _____ range.

(a) microvolt

(b) millivolt

(c) volt

(d) KV

Answer: (a)

124. Electrodes in which no net transfer of charge occurs across the metal electrolyte interface is called as _____.

(a) Surface electrodes

(b) perfectly polarized electrodes

(c) perfectly nonpolarizable electrodes

(d) needle electrodes

Answer: (b)

125. Bourdon tube transducers are usually used for _____ pressure ranges.

(a) very low
(b) very high
(c) low
(d) high

Answer: (d)

126. In differential pressure transducers the two pressures are applied to _____ sides of the diaphragm.

(a) same
(b) opposite
(c) different
(d) unconnected

Answer: (b)

127. A _____ which actually indicates volume changes in body segments can be used to measure the flow of blood in the limbs.

(a) plethysmograph
(b) magnetic blood flow meter
(c) ultrasonic blood flow meter
(d) flow meter

Answer: (a)

128. _____ is based on the principle of induction.

(a) Magnetic blood flow meters
(b) Ultrasonic blood flow meters
(c) Blood flow meters
(d) Plethysmograph

Answer: (a)

129. Thermistor is the short form of _____.

(a) temperature resistance
(b) temperature resistor
(c) thermal resistor
(d) thermal transistor

Answer: (c)

130. Thermistor is _____ transducer.

(a) an inverse
(b) a passive
(c) an active
(d) a digital

Answer: (b)

131. The recording and interpreting the electrical activity of the eye is called _____.

(a) ERG
(b) EOG
(c) ECG
(d) EEG

Answer: (b)

132. The conduction velocity in peripheral nerves is _____.

(a) 230 m/sec
(b) 500 m/sec
(c) 5 m/sec
(d) 50 m/sec

Answer: (d)

133. The ECG machine has a built in standardization voltage of _____.

(a) 10 V
(b) 1 mV
(c) 1 V
(d) 12 V

Answer: (b)

134. The generally used paper speed in a ECG machi s _____.

(a) 35 mm/sec
(b) 25 mm/sec
(c) 15 mm/sec
(d) 5 mm/sec

Answer: (b)

135. The patient cable in an EEG machine consists of _____ electrodes.

(a) 23
(b) 20
(c) 22
(d) 21

Answer: (d)

136. EEG helps physicians to diagnose _____.

(a) lung disease
(b) heart disease
(c) sleep disorders
(d) Breast cancer

Answer: (c)

137. Generally EMG signals range from _____.

(a) 0.1 to 0.5 mV

(b) 0.1 to 5 mV

(c) 1 to 1.5 mV

(d) 0.2 to 5.5 mV

Answer: (a)

138. In EMG recording to record the action potentials from a single muscle _____ are used.

(a) needle electrodes

(b) microelectrodes

(c) suction cup electrodes

(d) surface electrodes

Answer: (a)

139. A slower heart rate is termed as _____.

(a) tachycardia

(b) bradycardia

(c) cardiac infarction

(d) coronary thrombosis

Answer: (b)

140. The pulse wave travels at _____ depending on the size and rigidity of the arterial walls.

(a) 10 to 15 m/sec

(b) 5 to 15 m/sec

(c) 5 to 10 m/sec

(d) 5 to 55 m/sec

Answer: (b)

Discipline3

141. Blood is pumped by the _____ of the heart into the aorta.

(a) left side

(b) right side

(c) top side

(d) middle

Answer: (a)

142. Among the given options pick out the name of the equipment used for assessing the function of the lungs.

(a) Trendmill

(b) Sphygmomanometer

(c) Ergometer

(d) Spirometer

Answer: (d)

143. A _____ is a device that delivers electric shock to the heart muscle undergoing a fatal arrhythmia.

(a) ventilator
(b) heart lung machine
(c) pacemaker
(d) defilrillator

Answer: (d)

144. In a _____ pacemaker in the absence of R waves the device automatically reverts to a fixed rate mode of operation.

(a) demand
(b) fixed rate
(c) atrial programmed
(d) ventricular programmed

Answer: (a)

145. In case of internal pacemakers the rate is preset during manufacture at a typical value of _____ pulses per minute.

(a) 82
(b) 75
(c) 72
(d) 80

Answer: (c)

146. The main source of potentially lethal c[illegible]nts [illegible]ny instrument or equipment is the _____.

(a) leakage current
(b) gross current
(c) let go current
(d) earth leakage current

Answer: (a)

147. Currents of extremely small magnitude can be fatal to a patient when a direct localized electrical path exists to the _____.

(a) kidney
(b) brain
(c) lung
(d) heart

Answer: (d)

148. The contact impedance of the human body to electrical currents through intact skin surfaces can vary from _____.

(a) 10 to 100 K Ohms
(b) 1 to 10 K Ohms
(c) 1 to 100 K Ohms
(d) 20 to 100 K Ohms

Answer: (c)

149. The entire heart muscle contracts at a current which is in the range of _____.

(a) 1 to 16 A
(b) 1 to 6 A
(c) 10 to 16 A
(d) 11 to 16 A

Answer: (b)

150. The Part-III of IS:8607 of the BIS standards covers the aspect of _____.

(a) protection against electric shock
(b) protection against mechanical hazards
(c) behaviour and reliability
(d) protection against explosion hazards

Answer: (b)

151. The IEC recommends that for medical equipment, the current flowing continuously through the body should NOT exceed _____.

(a) 200 µA
(b) 150 µA
(c) 190 µA
(d) 100 µA

Answer: (d)

152. Which of the following standards covers the general and safety requirements of electromedical equipment?

(a) IS:8707
(b) IS:8667
(c) IS:9607
(d) IS:8607

Answer: (d)

153. In measurement system, which of the following is an undesirable static characteristic?

(a) Accuracy
(b) Precision
(c) Drift
(d) Reproducibility

Answer: (c)

154. The static characteristics are defined for the instruments which measure quantities which do not vary with _____.

(a) frequency
(b) time
(c) current
(d) voltage

Answer: (b)

155. In a biomedical preamplifier the output impedance of the amplifier should be _____.

(a) medium
(b) very high
(c) high
(d) very small

Answer: (d)

156. The Common Mode Rejection Ratio (CMRR) should be more than _____ so as to eliminate the 50 Hz interference from the mains.

(a) 60 dB
(b) 70 dB
(c) 80 dB
(d) 50 dB

Answer: (c)

157. The voltage gain value of an ideal op amp is __ _.

(a) zero
(b) infinity
(c) one
(d) hundred

Answer: (b)

158. Which among the following is NOT a display device in a biomedical measurement system?

(a) Chart recorder
(b) CRT
(c) Numerical displays
(d) 3D display

Answer: (d)

159. Which among the following is NOT an advantage of an instrumentation amplifier?

(a) Low bias and offset current
(b) Very low CMRR
(c) High slew rate
(d) Low power consumption

Answer: (b)

160. Strain gauge can be classified as a _____.

(a) Active transducer

(b) Passive transducer

(c) Inverse transducer

(d) Forward transducer

Answer: (b)

Discipline4

161. LVDT stands for _____.

(a) Linear Variant Differential Transformer

(b) Linear Variable Differential Transducer

(c) Linear Variable Differential Transformer

(d) Linear Variable Difference Transformer

Answer: (c)

162. The working principle of LVDT is based on _____.

(a) change in self inductance

(b) change in reluctance

(c) change of mutual inductance

(d) change in permanence

Answer: (c)

163. Typical operating excitation voltage of LVDT tr ducers is _____ at 2.5 kHz.

(a) 5 V

(b) 16 V

(c) 10 V

(d) 6 V

Answer: (d)

164. The gauge factor value of silicon is _____.

(a) 110

(b) 120

(c) 100

(d) 90

Answer: (b)

165. What is the main advantage of a silicon bonded strain gauge?

(a) Easily available

(b) Long life

(c) Easy manufacture

(d) Higher gauge factor

Answer: (d)

166. In silicon MEMS based blood pressure transducer the pressure corresponds to deflection of a _____.

(a) rubber diaphragm
(b) stainless steel diaphragm
(c) micromachined diaphragm
(d) metal diaphragm

Answer: (c)

167. The unbonded strain gauge pressure transducers are preferred when _____ pressure measurements are to be made.

(a) medium
(b) very high
(c) high
(d) low

Answer: (d)

168. _____ are normally used for surface skin temperature measurements.

(a) Thermocouples
(b) Thermistor
(c) RTD
(d) Thermopile

Answer: (a)

169. The two metals used in making up the junction K type thermocouple is _____.

(a) Copper and Constantan
(b) Iron and Constantan
(c) Chromel and Alumel
(d) Platinum and Platinum

Answer: (c)

171. Convert the decimal number 45 into binary number.

(a) 111101
(b) 111111
(c) 101101
(d) 100101

Answer: (c)

172. Delta modulation is employed to realize _____ signal to noise ratio.

(a) low
(b) high
(c) medium
(d) very low

Answer: (b)

173. The key benefit of delta modulation technique over pulse code modulation technique is _____.

(a) higher accuracy
(b) Low channel bandwidth
(c) less noise
(d) high signal to noise ratio

Answer: (b)

174. Which among the following factors is an disadvantage of digital communication?

(a) Immunity to distorsion
(b) Immunity to interference
(c) Lower cost
(d) Large bandwidth

Answer: (d)

175. The data link layer in the OSI model is composed of two parts, namely the logical Link Control and _____.

(a) Main Access Control
(b) Media Access Control
(c) Media Access Controller
(d) Media Altered Control

Answer: (b)

176. Which among the following is NOT a type of loc rea network classification based on the method used for sharing data?

(a) token bus
(b) WAN
(c) token ring
(d) ethernet

Answer: (b)

177. Which of the following is NOT an advantage of star topology?

(a) Easy to troubleshoot
(b) Relatively easy to configure
(c) Media faults are automatically isolated
(d) Requires more cable than most topologies

Answer: (d)

178. There are _____ types of ISDN networks.

(a) 4
(b) 3
(c) 2
(d) 6

Answer: (c)

179. ISDN stands for _____.

(a) Integrated Services Digital Network

(b) Integrated Services Digitized Network

(c) Imported Services Digital Network

(d) Integrated Serviced Digital Network

Answer: (a)

180. Which among the following is a 3G standard?

(a) LTE

(b) GSM

(c) GPRS

(d) UMTS

Answer: (d)

Discipline5

181. _____ database contains the static information of the mobile phone subcribers.

(a) LLR

(b) VLR

(c) HLR

(d) VHLR

Answer: (c)

182. GSM uses _____ modulation scheme.

(a) QPSK

(b) GMSK

(c) BPSK

(d) BFSK

Answer: (b)

183. Bluetooth operates in _____ band.

(a) 1 GHz

(b) 1 MHz

(c) 2.4 GHz

(d) 2.4 MHz

Answer: (c)

184. How many register banks are ther in 8051 microcontroller?

(a) 1

(b) 2

(c) 3

(d) 4

Answer: (d)

185. Which among the following is NOT a field in an Assembly Language command?

(a) The Label field
(b) The Mnemonics field
(c) The Comments field
(d) The Title field

Answer: (d)

186. What is the size of the data pointer (DPTR) register in 8051?

(a) 8 bits wide
(b) 16 bits wide
(c) 32 bits wide
(d) 64 bits wide

Answer: (b)

187. _____ is the flags register in 8051.

(a) PSW register
(b) A register
(c) B register
(d) Data pointer register

Answer: (a)

188. Assembly langauge programming is a _____ lev rogramming language.

(a) high
(b) low
(c) medium
(d) intermediate

Answer: (b)

189. The operand field does not consist of _____.

(a) symbols
(b) constants
(c) expressions
(d) macro call

Answer: (d)

190. The _____ directive is used to tell the assembler that the name of the logical segment should be used for a specified segment.

(a) DW
(b) DB
(c) ASSUME
(d) DD

Answer: (c)

191. _____ directive is used to give a name to some value or to a symbol.

(a) EQU
(b) ENDP
(c) ENDS
(d) END

Answer: (a)

192. Seven segment displays internally consist of _____ LEDs.

(a) 7
(b) 8
(c) 9
(d) 10

Answer: (b)

193. Which among the following Boolean operation is NOT used in PLC?

(a) AND
(b) OR
(c) NOT
(d) NAND

Answer: (d)

194. Which among the following is NOT a characteristic of PLC?

(a) Field programmable
(b) Contains programmed functions
(c) Provides error checking
(d) Application specific

Answer: (d)

195. PLCs generally use _____ for representing a logic or a sequence of events.

(a) block diagram
(b) ladder diagram
(c) flow diagram
(d) model

Answer: (b)

196. If an implantable defibrillators detects fibrillation the capacitors within the device are charged upto _____.

(a) 800 V
(b) 750 V
(c) 900 V
(d) 600 V

Answer: (b)

197. An _____ is a medical device that is capable of exchanging oxygen and carbon dioxide in the blood.

(a) ECMO
(b) Roller pump
(c) HLM
(d) oxygenator

Answer: (d)

198. The ideal heart lung machine can oxygenate upto 5 liters/min of venous blood to _____.

(a) 95-100%
(b) 90-99%
(c) 80-90%
(d) 88-90%

Answer: (a)

199. Laparoscopy is also known as _____.

(a) Holeless surgery
(b) Key hole surgery
(c) Invasive surgery
(d) Noninvasive surgery

Answer: (b)

200. The normal systolic/diastolicpressure is ____ m g.

(a) 140/80
(b) 120/80
(c) 130/90
(d) 140/100

Answer: (b)

Answer key

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

General Ability

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

General Awareness

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

Arithmetic Ability

41	**(a)**	42	**(c)**	44	**(d)**	45	**(b)**	46	**(d)**	48	**(c)**
49	**(a)**	50	**(b)**	51	**(d)**	52	**(c)**	53	**(b)**	56	**(b)**

General English

61	**(b)**	62	**(b)**	63	**(a)**	64	**(b)**	65	**(d)**	66	**(b)**
67	**(a)**	68	**(a)**	69	**(c)**	70	**(b)**	71	**(c)**	72	**(d)**
73	**(c)**	74	**(c)**	75	**(c)**	76	**(b)**				

Discipline1

101	**(b)**	102	**(b)**	103	**(c)**	104	[illegible]	105	**(c)**	106	**(a)**
107	**(d)**	108	**(c)**	109	**(d)**	110	**(b)**	111	**(a)**	112	**(d)**
113	**(a)**	114	**(c)**	115	**(a)**	116	**(a)**	117	**(d)**	118	**(b)**
119	**(a)**	120	**(b)**								

Discipline2

121	**(c)**	122	**(d)**	123	**(a)**	124	**(b)**	125	**(d)**	126	**(b)**
127	**(a)**	128	**(a)**	129	**(c)**	130	**(b)**	131	**(b)**	132	**(d)**
133	**(b)**	134	**(b)**	135	**(d)**	136	**(c)**	137	**(a)**	138	**(a)**
139	**(b)**	140	**(b)**								

Discipline3

141	**(a)**	142	**(d)**	143	**(d)**	144	**(a)**	145	**(c)**	146	**(a)**
147	**(d)**	148	**(c)**	149	**(b)**	150	**(b)**	151	**(d)**	152	**(d)**
153	**(c)**	154	**(b)**	155	**(d)**	156	**(c)**	157	**(b)**	158	**(d)**
159	**(b)**	160	**(b)**								

Discipline4

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

Discipline5

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