PREVIOUS YEAR PAPER

DSSSB TGT Maths (Male) 2021 — 2 September 2021, Shift 3

DSSSB TGT · 2 September 2021 · Shift 3

167 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: 33 (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 2 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-tgt/previous-year-papers/dsssb-tgt-2021-maths-male-2-sep-shift-3/

General Ability

1. Select the option that is related to the third term on the same basis as the second term is related to the first term.
65 : 74 :: 40: ?

(a) 48
(b) 49
(c) 50
(d) 51

Answer: (b)

2. Out of the given options, three are similar in a ce n manner. However, one option is NOT like the other three. Select the option which is om the rest.

(a) Copper
(b) Nickel
(c) Silver
(d) Iodine

Answer: (d)

3. Out of the given options, three are similar in a certain manner. However, one option is NOT like the other three. Select the option which is different from the rest.

(a) K
(b) X
(c) R
(d) N

Answer: (a)

4. Complete the following letter series:
AZOM, CXQK, EVSI, ___

(a) FTTJ

(b) GTUJ

(c) GTUG

(d) GUTG

Answer: (c)

5. Find the wrong term in the given series.
111, 100, 87, 71, 55, 36

(a) 71

(b) 87

(c) 55

(d) 36

Answer: (a)

6. In the question one statement is 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.
Statement:
$A \leq B \geq C > D$; $A \geq E = F < G$
Conclusions:
I. $B > F$
II. $B = F$

(a) Only conclusion I follows

(b) Only conclusion II follows

(c) Either conclusion I or II follow

(d) Both conclusion I and II follow

Answer: (c)

7. Six friends Anil, Babita, Chaman, Dhoni, Ellen and Farukh are going to college. Ellen is only older than Anil and Babita but shorter than only Farukh. Dhoni is younger than only Farukh & taller than only Anil & Babita. Neither Anil is youngest nor Babita is the shortest one. How many friends are there who occupy same position in both orders?

(a) 1

(b) 2

(c) 3

(d) 4

Answer: (b)

8. Following are the criteria for selection of a Management Trainee.
The candidate must -
a - Be a graduate in any discipline with at least 72% marks.
b - Not be less than 21 years and not more than 25 years of age.
c - Have cleared the written test and interview with at least 70% marks.
d - Be willing to pay a deposit of 50,000 rupees which is to be refunded on completion of training.
However, if all of the above said criteria is satisfied except -
I - At (a) above, but has completed post graduation with at least 65% marks , the case will be referred to the Director.
II - At (d) above, but has an experience of working in this field for more than a year, the case may be referred to the Manager.
Sumit has done BBA from a government college with 74% marks and his score in the written test and interview is 75%. His age is 25 years and has an experience of 2 years in this field. He is not willing to pay a deposit of Rs. 50,000.

(a) The candidate is selected.

(b) The candidate is not selected.

(c) The candidate is referred to Director.

(d) The candidate is referred to Manager.

Answer: (d)

9. A reputed educational foundation is to select meritorious students for the scholarships for higher studies abroad who fulfill the following criteria:
1. Age — More than 18 years but less than 24 years as on 1.7.2021
2. Minimum percentage of Graduation marks — 70%
3. Prizes/Awards — Should have won first prize at state level at least in Essay, Debate or Sports.
4. Annual family income — Not be more than Rs. 2,[illegible]000
5. Domicile — Must be staying in India for [illegible] years or above as on 1.7.2021
However, if the candidate fulfills all the above criteria except
1. (3), but has secured second rank in essay/debate/sports competition at state level- the case may be referred to the Secretary of the Foundation.
2. (4) but has secured 90% marks in graduation- the case may be referred to Chairperson of the foundation.
You have to study the information provided for a candidate in the following question and decide the course of action.
Chirag who will be 23 years old on 1.1.2021, passed B.Com. with 92% marks. His father, a Government employee, has been working in Delhi since 1989 whose present monthly income is Rs.30,000. Chirag got 1st prize in the State Essay Competition.

(a) The candidate is selected.

(b) The candidate is not selected.

(c) The candidate is referred to secretary.

(d) The candidate is referred to the chairperson.

Answer: (d)

10. Find the missing number in the given series:
53, 55, 113, 343, ___

(a) 1377

(b) 1367

(c) 1357

(d) 1387

Answer: (a)

11. The following question is based on the five three-digit numbers given below.
283 395 768 534 187
If the positions of the first and the second digit within each number are interchanged, which of the following will be the second highest number?

(a) 283

(b) 395

(c) 768

(d) 534

Answer: (a)

12. How many such letters are there in the word BLOKEISH each of which is as far away from the beginning of the word as it is from the beginning of the English alphabet?

(a) One

(b) Two

(c) Three

(d) Four

Answer: (b)

13. Read all the information and an answer to the question.
A + B means 'A is the mother of B';
A— B means 'A is the brother of B';
A × B means 'A is the father of B';
A ÷ B means 'A is the daughter of B'; How is C related to E in the expression A —B + C × D ÷ E?

(a) Husband

(b) Wife

(c) Father

(d) Brother

Answer: (a)

14. D, C, B and A are sitting around a table facing each other. They like different Colours Yellow, Blue, Black, Red.
(1) D sits opposite to person who likes black.
(2) C sits immediate right to the person who likes Blue.
(3) The person who likes Yellow is on the left of the person who likes Red.
(4) A sits opposite B who doesn't like Yellow.
Who likes Red?

(a) D
(b) C
(c) B
(d) A

Answer: (a)

15. Train A crossed a man in 12 seconds and crossed a train B running in the opposite direction in 24 seconds. If the length of train B is double of the length of train A and speed of train B is 54 km/h, then find the speed of train A.

(a) 90 km/hr
(b) 75 km/hr
(c) 100 km/hr
(d) 108 km/hr

Answer: (d)

General Awareness

21. Recently (in May 2021) which cyclone has hit G at?

(a) Pawan
(b) Tauktae
(c) Pabuk
(d) Kyarr

Answer: (b)

22. The Anti Covid Drug developed by DRDO is named:

(a) 1-Deoxy-D-Glucose (2-DG)
(b) 2-Deoxy-D-Glucose (2-DG)
(c) 3-Deoxy-D-Glucose (2-DG)
(d) 2-Deoxy (2-D)

Answer: (b)

23. What are the Mahayana and Hinayana?

(a) Name of the two students of Mahatma Buddha
(b) Mahayana' means 'great vehicle. ' 'Hinayana' means' 'small vehicle' or 'lesser vehicle'
(c) Two major sects of Hinduism
(d) Name of books written by the students of Mahatma Buddha

Answer: (b)

24. The Milinda Panha is a Buddhist text that may have initially been written in which language?
    (a) Sanskrit
    (b) Hindi
    (c) English
    (d) Urdu
    Answer: (a)

25. Currently (As on 2021), who is the Speaker of the Lok Sabha?
    (a) Meira Kumar
    (b) Sumitra Mahajan
    (c) Om Puri
    (d) Om Birla
    Answer: (d)

26. Article 71A is related to:
    (a) It provides that disputes arising out of the election of the President or Vice-President shall be decided by. the Election Commission.
    (b) It provides that disputes arising out of the election of the President or Vice-President shall be decided by. the High Court.
    (c) It provides that disputes arising out of the election of the President or Vice-President shall be decided by. the Supreme Court.
    (d) It provides that disputes arising out of the elec ı of the President or Vice-President shall be decided by. the District Court.
    Answer: (c)

27. The Milkha Singh was an Indian track and . rinter was also known as:
    (a) The Fighter Sikh
    (b) The Flying Sikh
    (c) The Flying man
    (d) The Fighter Flying Sikh
    Answer: (b)

28. Kabaddi is the National game of which country?
    (a) Russia
    (b) Bangladesh
    (c) Pakistan
    (d) India
    Answer: (b)

29. Select the dance form which is popular in Maharashtra:
    (a) Sattriya
    (b) Bihu
    (c) Kathak
    (d) Lavani
    Answer: (d)

30. The Dadasaheb Phalke Awards is given in which field?
    (a) Cinema
    (b) Sports
    (c) Peace
    (d) literature
    Answer: (a)

31. Which is the hottest planet in the solar system?
    (a) Mars
    (b) Venus
    (c) Uranus
    (d) Neptune
    Answer: (b)

32. Select the name of the peninsular country:
    (a) India
    (b) Philippines
    (c) Austria
    (d) Brazil
    Answer: (a)

33. What is the theme of the Economic Survey 2020-
    (a) Rural development and agriculture Education
    (b) Enable Markets, Promote 'Pro-Business'
    (c) "Shifting Gears"
    (d) Saving Lives & Livelihoods
    Answer: (d)

34. A very basic solution (high pH) will change the color of beets or beet juice from _____.
    (a) violet to green
    (b) purple to yellow
    (c) red to purple
    (d) pink to black
    Answer: (c)

35. Enzymes are required to:
    (a) Repair blood cells in body
    (b) Digest the food in stomach
    (c) Increasing oxygen level in body
    (d) Sharpen the eye sight
    Answer: (b)

36. Which one of the following is not a Vector-Borne Disease?
    (a) Ebola virus
    (b) Dengue fever
    (c) Malaria
    (d) Lymphatic filariasis
    Answer: (a)

37. Which one is not a dwarf planet?
    (a) Pluto
    (b) Eris
    (c) Makemake
    (d) Venus
    Answer: (d)

38. How many organs the United Nations Organization have?
    (a) Seven
    (b) Three
    (c) Six
    (d) Eight
    Answer: (c)

39. Currently (As on August 2021), who is the Governor of the Reserve Bank of India?
    (a) Urjit Patel
    (b) Shri Shaktikanta Das
    (c) T. Rabi Sankar
    (d) Raghuram Rajan
    Answer: (b)

40. Currently (As on 2021), who is the Chairperson of the Union Public Service Commission?
    (a) Vinay Mittal
    (b) Sujata Mehta
    (c) Prof. (Dr.) Pradeep Kumar Joshi
    (d) Arvind Saxena
    Answer: (c)

Arithmetic Ability

41. What is the least number that should be multiplied to 1536 to make it a perfect cube?
    (a) 7
    (b) 8
    (c) 9
    (d) 10
    Answer: (c)

42. Simplify:
(0.023×0.023×0.023+0.017×0.017×0.017)/(0.023×0.023-0.023×0.017+0.017×0.017)

(a) 0.4

(b) 0.04

(c) 0.044

(d) 0.004

Answer: (b)

43. If 7x/(1+1/(1-x/(1+x))) = 2 then what is the value of x?

(a) 5/4

(b) 4/5

(c) 4

(d) 5

Answer: (b)

44. A wall is 5.5 m high and 6.5 m broad. What is the number of maximum size squares that is required to cover the wall with square shaped papers?

(a) 134

(b) 133

(c) 144

(d) 143

Answer: (d)

45. What is the length largest scale that measures accurately, the three equilateral triangles with sides measuring 68cm, 102cm and 136cm.

(a) 2 cm

(b) 34 cm

(c) 43 cm

(d) 44 cm

Answer: (b)

46. Ram, Shyam and Dheeraj are in a partnership. They had a profit of Rs 531000 for the year. Their capital is in the ratio 1/2:1/5:1/7. What is the share of Shyam?

(a) Rs. 90000

(b) Rs. 125000

(c) Rs. 126000

(d) Rs. 315000

Answer: (c)

47. Two numbers are in the ratio 3:7. When 12 is added to both the numbers than ratio becomes 9:17. What are the numbers?

(a) 56,24
(b) 42,65
(c) 24,65
(d) 24,56

Answer: (d)

48. In 8L solution of alcohol and water, the percentage of alcohol is 13%. If 2L of water is added to the solution then what is the new percent of alcohol concentration in the solution?

(a) 10.0%
(b) 11.0%
(c) 9.0%
(d) 10.4%

Answer: (d)

49. A man's salary is deducted with 8% on house rent. Then 15% of the rest is spent on house utilities and 20% of the rest is spend on miscellaneous and children's education. After these, his savings is Rs. 988448. What is the man's original salary?

(a) Rs. 1580000
(b) Rs. 1850000
(c) Rs. 158000
(d) Rs. 185000

Answer: (a)

50. What is the average of the first 47 natural numbers?

(a) 24
(b) 42
(c) 2
(d) 4

Answer: (a)

51. What is the average of the prime numbers between 15 to 49?

(a) 31.98
(b) 31.89
(c) 31
(d) 30.89

Answer: (b)

52. A shopkeeper has a lot of products worth Rs. 20000. 1/4th of them are sold at a 14% profit. At what profit percentage should the rest be sold so that the overall profit is 16.5%?

(a) 16.0%
(b) 15.0%
(c) 170%
(d) 17.33%

Answer: (d)

53. A man allows 16% discount on the list price. After the discount he makes a 12% profit at Rs. 9408. What is the cost price?

(a) Rs. 4800
(b) Rs. 8400
(c) Rs. 8000
(d) Rs. 4000

Answer: (b)

54. What is the difference between the discount of 18% and two successive discounts of 12% and 6% on a Rs. 48900 bill?

(a) Rs. 352
(b) Rs. 352.08
(c) Rs. 353
(d) Rs. 351

Answer: (b)

55. The interest rate is 14% p.a. that is being compounded half-yearly. The sum of money is Rs. 965000 and the duration is 3 years. What is the compound interest?

(a) Rs. 483240.79
(b) Rs. 483204.79
(c) Rs. 483402.79
(d) Rs. 483420.79

Answer: (b)

56. A room is 17m long, 12m wide and 10m long. What would be the length of the pole that can be put in that room?

(a) 23.9 m
(b) 23 m
(c) 24 m
(d) 23.09 m

Answer: (d)

57. P and Q can do carpeting in 6 days. Q and R can do the same carpeting in 8 days while R and P can do it in 10 days. How long will they take if they all work together?

(a) 240/47 days

(b) 240/48 days

(c) 240/49 days

(d) 241/47 days

Answer: (a)

58. The police spotted the thief at a distance of 200m. The speed at which thief ran was 9 km/h and police ran at 11 km/h. How far will the thief will have to go before police catches the thief?

(a) 990 m

(b) 900 m

(c) 890 m

(d) 800 m

Answer: (b)

General English

61. 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'.
This phenomena made its appearance / even during the short lived period of / the Soviet republic in Bavaria.

(a) This phenomena made its appearance

(b) even during the short lived period of

(c) the Soviet republic in Bavaria.

(d) No Error

Answer: (a)

62. 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'.
But intellectual madness would have / resulted from a development that followed / the acceptance of it's own kind of art.

(a) But intellectual madness would have

(b) resulted from a development that followed

(c) the acceptance of it's own kind of art.

(d) No Error

Answer: (c)

63. 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.
She settles into the cockpit, (surrounding with dozen of complicating switches and sophisticated gauges,) sitting atop a massive $84 million piece of machinery.

(a) surrounding with dozens of complicating switch and sophisticating gauges

(b) surrounded around dozens of complicated switches and sophisticated gauges,

(c) surrounded by dozens of complicated switches and sophisticated gauges,

(d) No correction required.

Answer: (c)

64. 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.
Even though (he do not realize it, he) was responsible for his own problems.

(a) he don't realize it, he

(b) he didn’t realize it, he

(c) he don't realizes it, he

(d) No correction required.

Answer: (b)

65. Fill in the blank with the most appropriate choice.
Still another _____ symptom has to be considered

(a) overwhelming

(b) critical

(c) tuberous

(d) violent

Answer: (b)

66. The sentences below are not complete. There are four options for each question. Choose the best word to complete the sentence.
In the _____, completing a marathon makes us happier than eating a chocolate pie.

(a) fast running

(b) fastest run

(c) long run

(d) long duration

Answer: (c)

67. Some parts of a sentence have been jumbled up, and labelled P, Q, R and S. Select the option that gives the correct sequence in which these parts can be rearranged to form a meaningful and grammatically correct sentence.
Photosynthesis is a process
P. convert light energy into chemical energy that,
Q. can later be released to fuel the
R. used by plants and other organisms to
S. through cellular respiration,
organism's metabolic activities.

(a) PQRS

(b) QSRP

(c) SRQP

(d) RPSQ

Answer: (d)

68. 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.
Pangaea or Pangea is derived from Ancient Greek pan meaning "all, entire, whole" and Gaia "Mother Earth, land").
P. It was a supercontinent that existed during the late Palaeozoic and early Mesozoic eras.
Q. Pangaea is the most recent supercontinent to have existed and the first to be reconstructed by geologists.
R. It assembled from earlier continental units approximately 335 million years ago, and began to break apart about 175 million years ago.
S. In contrast to the present Earth and its distribution of continental mass, Pangaea was centred on the Equator and surrounded by the superocean Panthalassa.
The forming of supercontinents and their breaking up appears to have been cyclical through Earth's history.

(a) RSPQ

(b) SPRQ

(c) PRSQ

(d) QPSR

Answer: (c)

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

(a) LAISCION

(b) LAISON

(c) LIASION

(d) LIAISON

Answer: (d)

70. Select the word that is similar in meaning (SYNONYM) to the word given below.
GRUDGE

(a) COMMUNION
(b) CONCORD
(c) MALICE
(d) RAPPORT

Answer: (c)

71. Select the word that is similar in meaning (SYNONYM) to the word given below.
RAPACIOUSNESS

(a) BENEFICENCE
(b) MUNIFICENCE
(c) PROFUSION
(d) VORACIOUSNESS

Answer: (d)

72. Select the word that is opposite in meaning (ANTONYM) to the word given below.
GRATIFYING

(a) DELIGHTFUL
(b) PLEASANT
(c) DREARY
(d) EVENTFUL

Answer: (c)

73. Select the most appropriate meaning fo[illegible] w[illegible] given below.
Axiom

(a) A position requiring little or no work but giving the holder status or financial benefit.
(b) Denoting a sin that is not regarded as depriving the soul of divine grace.
(c) A statement or proposition on which an abstractly defined structure is based.
(d) The action or offence of speaking sacrilegiously about God or sacred things.

Answer: (c)

74. Select the most appropriate meaning of the given idiom.
Burn your bridges

(a) Overcome your emotions and move on in life.
(b) To destroy your enemies.
(c) To destroy confidential information.
(d) To destroy a bridge or path behind oneself.

Answer: (d)

75. Select the most appropriate meaning of the given proverb.
The rats are leaving the sinking ship.

(a) In an emergency you do things that you would not otherwise do.
(b) Don’t expect a good event to happen before it has actually happened.
(c) You shouldn’t be too sure of something, even if the prospect is good.
(d) Turning away from failing or fleeing from an unpleasant situation.

Answer: (d)

Discipline1

101. Which of the following property doesn't hold?

(a) [x]=x if x is an integer
(b) [x+y]>[x]+[y]
(c) [-x]=[x] if x is an integer
(d) [-x]=-[x]-1 if x is an integer

Answer: (c)

102. What is domain of definition of exponential function?

(a) real numbers
(b) integers
(c) whole numbers
(d) rational number

Answer: (a)

103. In what range does sec(x) become inv[illegible]?

(a) R
(b) R-(-1,1)
(c) R-{0}
(d) Z

Answer: (b)

104. Asymptotes are the tangents to the curve at which point?

(a) infinity
(b) one point
(c) two points
(d) three points

Answer: (a)

105. The curve given by xy=15 is symmetrical about what?

(a) x axis
(b) y axis
(c) about the line x=y
(d) about the origin

Answer: (c)

106. What is the volume of curve between the ordinate 0 to 4 around the curve x= y?

(a) 21π

(b) 21.33π

(c) 31π

(d) 31.33

Answer: (b)

107. What is the curved surface area of cone in general form?

(a) πrl

(b) πr(r+l)

(c) πrh

(d) πrhl

Answer: (a)

108. If the inner product between the vectors vanishes then what will be the angle between them?

(a) 0

(b) 35

(c) 45

(d) 90

Answer: (d)

109. Find the gradient of the scalar field if f(x,y)=x+y ,2)?

(a) i+j

(b) i+2j

(c) j-i

(d) j+2i

Answer: (a)

110. If A = 3i+j+k ; B = 5i+j-k ; C = i+j-k then find the volume of parallelopiped if A,B,C are sides of of parallelopipe respectively?

(a) 0

(b) 8

(c) 16

(d) 32

Answer: (b)

111. Find the middle term of A.P. if it is given that sum of three numbers in A.P. is 15?

(a) 5

(b) 10

(c) 15

(d) 20

Answer: (a)

112. A polynomial with real coefficients of n degree has _____ roots ?

(a) n real roots

(b) n imaginary roots

(c) n (may be real or imaginary)

(d) n-1 roots

Answer: (c)

113. If discriminant D>0 then what can you say about nature of roots?

(a) equal roots

(b) imaginary roots

(c) distinct real roots

(d) no real roots

Answer: (c)

114. Find total number of asymmetric relations on a set A ={e,f,g} ?

(a) 27

(b) 64

(c) 128

(d) 34

Answer: (a)

115. 2587322568103 is a number which is divisible by ıich number?

(a) 7

(b) 9

(c) 11

(d) 2

Answer: (a)

116. Euler function tends to infinity if which condition follows?

(a) n tends to zero

(b) n tends to infinity

(c) n tends to a positive limit

(d) n tends to a negative limit

Answer: (b)

117. How many subsets of set A occurs if A ={1,2,3,4}?

(a) 2

(b) 4

(c) 8

(d) 16

Answer: (d)

118. For any matrix to be in row reduced form which of the following conditions is not satisfied?

(a) Any row if has zero is at the bottom

(b) any leading entry is one

(c) Each leading one is to the right of one preceding row

(d) zero row is at the top of the matrix

Answer: (d)

119. What will be the rank of every non singular matrix of order n?

(a) n

(b) n+1

(c) 2n

(d) 2n+1

Answer: (a)

120. The rank of a matrix in echleon form is equal to:

(a) Number of non zero rows of the matrix

(b) number of zero rows of the matrix

(c) order of matrix

(d) number of variables

Answer: (a)

Discipline2

121. What is the limit point of the sequence <f>= 1?

(a) 0

(b) 1

(c) 2

(d) infinity

Answer: (b)

122. The greatest limit point of a bounded sequence is called?

(a) limit superior of f

(b) limit inferior of f

(c) maximum point of f

(d) minimum point of f

Answer: (a)

123. Any non-empty set of R which is bounded above has a _____?

(a) l.u.b

(b) g.l.b

(c) both exists finitely

(d) one exist infinitely

Answer: (a)

124. If cardinality of a set A is 6 and that of set B is 7 then find the Cardinality of $A \Delta B$?

(a) 7

(b) 5

(c) 35

(d) can not be determined

Answer: (d)

125. Every bounded sequence with a unique limit point is _____?

(a) convergent

(b) divergent

(c) oscillatory

(d) doesn't exist

Answer: (a)

126. If a function f is from R to R and a be a point which is given convergent to us,then what can we say about the sequence which is generated by its image i.e. f(a)?

(a) it is bounded

(b) it is convergent

(c) it is divergent

(d) it occurs finitely

Answer: (a)

127. Pick the wrong statement?

(a) Any cauchy sequence is bounded.

(b) Any convergent sequence is cauch,

(c) Any real Cauchy sequence is convergent

(d) In real every bounded monotonic sequence is divergent

Answer: (d)

128. The sum of the series n(Sin(n)) is_____.

(a) convergent

(b) divergent

(c) oscillates finitely

(d) oscillates infinitely

Answer: (b)

129. Let f be a sequence of bounded function and series given by f is uniformly continous to some function say g then _____.

(a) g is bounded

(b) g is unbounded

(c) g is infinite

(d) g occurs virtually to follow 1

Answer: (a)

130. What condition is satisfied if sequence of functions f is said to be uniformly bounded?

(a) |f(x)|<=M for some constant M and for all values of x

(b) |f(x)|=M for some constant M

(c) f(x) converge to a finite point

(d) f(x) converge to an infinite point

Answer: (a)

131. The solution of the curve given y=f(x), where y is the function of x ,also x and y are real numbers and is termed as what?

(a) solution curve

(b) polynomial curve

(c) bitsman curve

(d) functional curve

Answer: (a)

133. When the per capita rate of increase (r) takes the same positive value regardless of the population size, then we get which growth?

(a) logistics growth

(b) exponential growth

(c) both logistic and exponential

(d) transversal growth

Answer: (b)

134. The curve obtained in exponential growth is of which type?

(a) J shaped curve

(b) S shaped curve

(c) T shaped curve

(d) W shaped curve

Answer: (a)

135. Change in number of individuals in population over time is called?

(a) Population growth rate

(b) mortality rate

(c) immigration rate

(d) remainder rate

Answer: (a)

136. The general solution of the equation y''(x)=0 with the initial value problem s.t. at x=0 ; y=0 and y'=0 is?

(a) y(x)=x

(b) $y(x)=x^2/2$

(c) y(x)=x/2

(d) y(x)=1

Answer: (b)

137. Which of the following is used in mathematical modelling in Boolean algebra?

(a) constructive solid geometry
(b) lines figure
(c) complex analysis
(d) mines geometry

Answer: (a)

138. Which model accounts for time dependent change of a model?

(a) static model
(b) dynamic model
(c) bi-model
(d) generalized model

Answer: (b)

139. Which model is the one in which every set of variable states is uniquely determined by parameters in the model and by sets of previous states of these variables?

(a) deterministic model
(b) probability model
(c) discrete model
(d) continuous model

Answer: (a)

140. Find the limit of the function f(x,y)= x+y-6 at x=[illegible]2?

(a) 3
(b) -3
(c) 4
(d) -4

Answer: (b)

Discipline3

141. If f(x,y)=0 then find the directional derivative at c=(0,0) along the direction u=(a,b)?

(a) 0
(b) 1
(c) 2
(d) 3

Answer: (a)

142. If y is expressed in terms of a variable x as y = ƒ(x), then y is called what?

(a) implicit function
(b) explicit function
(c) convergent function
(d) divergent function

Answer: (b)

143. The sequence given by interval [0,1] is _____.

(a) Bounded

(b) unbounded

(c) connvergent

(d) divergent

Answer: (a)

144. Suppose that a is in the domain of the function f such that, for all x in the domain of f: f(x) < f(a)

(a) f is said to have maximum value at x=a

(b) f is said to have minimum value at x=a

(c) f has both maximum and minimum values at x= a

(d) f is unbounded

Answer: (a)

145. Which function defined on R by f(x)=x for every x in R, is continuous in R?

(a) constant function

(b) Riemann function

(c) identity function

(d) dirichlet function

Answer: (c)

146. Let f and g be two uniformly continuous function[illegible]n interval I and also each function is bounded on I, then what can you say about product [illegible]

(a) f.g is bounded

(b) f.g is integrable

(c) f.g is uniformly continous on R

(d) f.g is continous

Answer: (c)

147. Which condition is not required in checking for Taylor's theorem?

(a) It's (n-1)th derivative is continuous on [a,b]

(b) It's (n-1)th derivative is derivable on (a,b)

(c) there exists a real number between a and b

(d) f is necessarily bounded

Answer: (d)

148. Which of the following is not the application of Taylor's series?

(a) It is used to find value of whole function

(b) It reduces mathematical proofs

(c) It is used in optimization techniques

(d) It fails to solve power flow analysis

Answer: (d)

149. What is interval of Taylor's series expansion of tan(x)?

(a) (0,90)

(b) (-90,90)

(c) (-π,π)

(d) infinite region

Answer: (b)

150. When will be matrix of derivative of f given by f(x,y)=(x-y,xy) will be singular?

(a) if x=y

(b) if x=-y

(c) if x=0

(d) if y=0

Answer: (b)

151. Find the simultaneous limit of function ySin(1/x)?

(a) 0

(b) 1

(c) 2

(d) 3

Answer: (a)

152. While finding maximum value of a function what we get in the case if it's second derivative becomes zero?

(a) we get maxima at that point

(b) we get minima at that point

(c) we get possible inflection point

(d) we get both maxima and minima

Answer: (c)

153. Find curl (r) if r=2xyi+j+k.

(a) -2xk

(b) -2yk

(c) -2zk

(d) 0

Answer: (a)

154. Find the double integral of f(x,y,z) = (y+z)dx+(z+x)dy+(x+y)dz .

(a) 1

(b) -1

(c) 0

(d) 2

Answer: (c)

155. How do we find volume of a solid surface?

(a) By double integrating it

(b) By triple integrating it over the surface

(c) By finding it's line integral

(d) By integrating over the surface

Answer: (b)

156. Which theorem is valid in calculating integral for a multiple connected domain R?

(a) Green's theorem

(b) Gauss divergence theorem

(c) Stokes theorem

(d) Iterated integrals

Answer: (a)

157. The functions which are present on one side of Green's theorem are of which kind?

(a) Continuous partial derivative

(b) complete derivatives

(c) discrete derivatives

(d) only partial derivatives

Answer: (a)

158. The oscillation of a bounded function f on an inte l [a,b]is the _____ of the set {|f(x)-f(y)|}of the numbers.

(a) infimum

(b) supremum

(c) maximum

(d) minimum

Answer: (b)

159. The necessary and sufficient condition for a function f to be Riemann integrable is that for every partition P for every ε>0; which of the following condition must occur?

(a) $|U(f,P)-L(f,P)|<\varepsilon$

(b) $|U(f,P)-L(f,P)|>\varepsilon$

(c) $|U(f,P)-L(f,P)|=\varepsilon$

(d) Upper and lower sum vanishes

Answer: (a)

160. Pick the correct statement?

(a) Every continous function is Riemann integrable

(b) Every monotonic increasing function f is not Riemann integrable

(c) Every continous function is not Riemann integrable

(d) If function is increasing in interval it is not increasing in each of its subinterval

Answer: (a)

Discipline4

161. Every absolutely convergent improper integral is _____.

(a) convergent

(b) divergent

(c) oscillatory

(d) infinite

Answer: (a)

162. If f is the derivative of some function on [a,b],then there exists a number c in (a,b) such that Integral of f with respect to x= _____ .

(a) f(c)

(b) f(c).(b-a)

(c) f(c).(b+a)

(d) (b+a-c)f(c)

Answer: (b)

163. Find the limit point of the sequence <1,2,1/2,3,1/3.....>

(a) 0

(b) 1

(c) 2

(d) 3

Answer: (a)

164. Every uniformly continuous function on an interval is _____ on that interval.

(a) convergent

(b) divergent

(c) continuous

(d) oscillatory

Answer: (c)

165. If =<1/n> ,then what can you say about monotonic nature of f?

(a) monotonic

(b) monotonically increasing

(c) monotonically decreasing

(d) both increasing and decreasing

Answer: (c)

166. The expansion of power series having R as the radius of convergence and x,a be any two points in R , converges if _____.

(a) $|x-a|>R$

(b) $|x-a|<R$

(c) $|x-a|=R$

(d) nowhere convergent

Answer: (b)

167. What powers of x does expansion of sin(x) contains?

(a) odd powers of x

(b) even powers of x

(c) all powers of x

(d) any alternate powers of x

Answer: (a)

168. Let (X,d) be a metric space then what can you say about X and d?

(a) d is called metric and X is called ground set

(b) d is called metric but can't say about X

(c) both are called ground sets

(d) X is called metric and d is called ground set

Answer: (a)

169. If we are given two overlapping sets A and B in metric space then what can we say about d(A,B)?

(a) doesn't exist

(b) zero

(c) finite

(d) infinity

Answer: (b)

170. Let (X,d) be a metric space and Pn be the Cauchy sequence defined then {Pn} is _____.

(a) convergent

(b) divergent

(c) cauchy

(d) bounded

Answer: (a)

171. Let (X,d) be a metric space and E is contained in X , E is called nowhere dense set if _____.

(a) closure of E is empty

(b) closure of E is finite

(c) closure of E is not defined

(d) closure of E terminate after some steps

Answer: (a)

172. Which statement states that "Every complete metric space is of second category"?

(a) Baire sandwich theorem

(b) Baire category theorem

(c) Cantor Theorem

(d) Fundamental theorem

Answer: (b)

173. In metric space which function is always continuous?

(a) discrete function
(b) distance function
(c) continuous function
(d) bounded function

Answer: (b)

174. If f is a continuous function from X to Y , then this property is called ?

(a) continuous invariant
(b) continous variant
(c) distance variant
(d) completeness of metric space

Answer: (a)

175. Which of the following metric space is not complete?

(a) set of real numbers
(b) set of rationals
(c) set of complex numbers
(d) set of irrationals

Answer: (b)

176. Let (X,d) be a metric space and let B be a subset X then if B is closed then B is also _____.

(a) complete
(b) compact
(c) bounded
(d) unbounded

Answer: (a)

177. Inner automorphism corresponding to every element of an abelian group is?

(a) trivial
(b) non trivial
(c) infinite
(d) bounded

Answer: (a)

178. A group is called abelian if it satisfies_____ property.

(a) commutative property
(b) associative property
(c) existence of identity
(d) existence of inverse

Answer: (a)

179. Every element of a group G when expressed as internal Direct product of a,b,c,...z if and only of every element is uniquely expressed as ?

(a) G=a.b.c...z

(b) G=a+b+c+....+z

(c) G=a-b-c...-z

(d) G=a+b-c...z

Answer: (a)

180. If a group G is internal Direct product of its subgroups A,B,C,....Z then G is isomorphic to _____.

(a) internal Direct product of A,B,C...Z

(b) external direct product of A, B, C...Z

(c) A,B,C,...Z

(d) it is not isomorphic

Answer: (b)

Discipline5

181. The external direct product of two cyclic groups is _____.

(a) always cyclic

(b) need not cyclic

(c) abelian

(d) never cyclic

Answer: (b)

182. Name the smallest non cyclic group.

(a) k4

(b) q8

(c) abelian group of p order

(d) Matrix group

Answer: (a)

183. What are no. of elements of order 100 of Z(200)?

(a) 40

(b) 80

(c) 120

(d) 160

Answer: (a)

184. Multiply (1 2 3) and (5 6 4 1)?

(a) (1 5 6 4 2 3)

(b) (1 2 3 4 5 6)

(c) (2 3 4 5 6 7)

(d) (3 6 3 7 3 8)

Answer: (a)

185. Which of the following group is not normal under usual ring operation?

(a) 7 ssg

(b) 5 ssg

(c) 3 ssg

(d) 2 ssg

Answer: (d)

186. Let k be the number of the p-ssg of a finite group G. Then _____.

(a) k divides O(G)

(b) k doesn't divide O(G)

(c) k doesn't exist

(d) k bipolarates

Answer: (a)

187. If f(z) is analytic function whose real part is constant then f(z) is _____.

(a) constant

(b) Function of x only

(c) Function of y only

(d) Function of x and y both

Answer: (a)

188. Does C-R equations are necessary and sufficient for a function to be analytic?

(a) TRUE

(b) FALSE

(c) can't say about nature of equations

(d) depend on range of functions

Answer: (b)

189. Which theorem states that" An integral function attains every finite value with atmost one possible exception?

(a) Picard's theorem

(b) Jensen's inequality

(c) Jensen's formula

(d) Schwartz' lemma

Answer: (a)

190. What is order of convergence of $\cosh\sqrt{z}$?

(a) 0

(b) infinite

(c) one

(d) two

Answer: (b)

Teaching Methodology

191. What is the importance of discussion method in teaching?

(a) Stimulate critical thinking
(b) Activate Learning
(c) Initiate Talking
(d) Guided Conversation

Answer: (a)

192. Who decides textbook curriculum?

(a) the government
(b) the State Board of Education
(c) the education minister
(d) the principal of school

Answer: (b)

193. Teachers comprehend the relationship between different concepts through _____ which visually illustrate the relationships between concepts and ideas.

(a) Concept graph
(b) Concept maps
(c) Concept charts
(d) Concept diagrams

Answer: (b)

194. The school should aim at developing _

(a) Social, moral and spiritual values.
(b) Political and spiritual values.
(c) Economic, political and social values.
(d) Emotional, Moral and political values.

Answer: (a)

195. Which kind of family allows a woman to marry more than one man?

(a) Polyandrous family
(b) Polygynous family
(c) Monogamous family
(d) Extended family

Answer: (a)

196. From the following strategies which strategy can not be employed to make students conscious of gender issues which would result in developing an attitude of gender equality?

(a) Film analysis
(b) Analysis of Biographies
(c) Analysis of data collected from Interview
(d) Society analysis

Answer: (d)

197. Which one is correct Objective of teaching English?

(a) Literacy development

(b) Develop self-study habit

(c) Develop the ability of appreciation of ideas

(d) Develop knowledge

Answer: (a)

198. Which of the following skill is a sociological term relating to a person's "EQ"?

(a) Soft skills

(b) Hard skills

(c) Social skills

(d) People skills

Answer: (a)

199. Piaget's learning theory does not revolve around which pillars of schemas?

(a) Assimilation

(b) Accommodation

(c) Assessment

(d) Equilibration

Answer: (c)

200. Often referred to as the skin sense, the _____ inv es touch, movement and body positions in space.

(a) Kinesthetic Sense

(b) Tactual Sense

(c) Sense of Smell

(d) Sense of Hearing

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	**(b)**	2	**(d)**	3	**(a)**	4	**(c)**	5	**(a)**	6	**(c)**	7	**(b)**	8	**(d)**		
9	**(d)**	10	**(a)**	11	**(a)**	12	**(b)**	13	**(a)**	14	**(a)**	15	**(d)**				

General Awareness

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

Arithmetic Ability

41	**(c)**	42	**(b)**	43	**(b)**	44	**(d)**	45	**(b)**	46	**(c)**	47	**(d)**	48	**(d)**		
49	**(a)**	50	**(a)**	51	**(b)**	52	**(d)**	53	**(b)**	54	**(b)**	55	**(b)**	56	**(d)**		
57	**(a)**	58	**(b)**														

General English

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

Discipline1

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

Discipline2

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

Discipline3

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

Discipline4

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

Discipline5

181	**(b)**	182	**(a)**	183	**(a)**	184	**(a)**	185	**(d)**	186	**(a)**
187	**(a)**	188	**(b)**	189	**(a)**	190	**(b)**				

Teaching Methodology

191	**(a)**	192	**(b)**	193	**(b)**	194	**(a)**	195	**(a)**	196	**(d)**
197	**(a)**	198	**(a)**	199	**(c)**	200	**(b)**				