PREVIOUS YEAR PAPER

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

DSSSB TGT · 2 September 2021 · Shift 2

154 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: 46 (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 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-tgt/previous-year-papers/dsssb-tgt-2021-maths-male-2-sep-shift-2/

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.
SNJ : QLH :: LAP : ?

(a) JYN
(b) IYR
(c) JXN
(d) IXN

Answer: (a)

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) Calf
(b) Puppy
(c) Kitten
(d) Deer

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) BAC
(b) FEH
(c) TOW
(d) LTE

Answer: (d)

4. Complete the following letter series:
NAOB, PAQB, RASB, _____.

(a) SATB

(b) TASU

(c) TAUB

(d) TABU

Answer: (c)

5. Find the wrong term in the given series.
144, 288, 576, 1008, 1594, 2304, 3168

(a) 1008

(b) 1594

(c) 288

(d) 2304

Answer: (b)

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:
$G > W = U < T$; $K \leq H < W$
Conclusions:
I. $T > H$
II. $G \geq K$

(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: (d)

7. Z, Y, X, W, V, and U have different heights. Two persons are either taller or smaller than V. W is taller than Z but not the tallest. Y is taller than only U. If Z is taller than only two persons, then who is the tallest person?

(a) U

(b) Z

(c) W

(d) X

Answer: (d)

8. Following are the criteria to recruit a HR Consultant in an organisation:
The candidate must
(a) be a graduate in any discipline with minimum 70% marks.
(b) be above 25 years and not above 30 years of age as on 01-01-2021.
(c) have done MBA in HR.
(d) have an experience of minimum three years in HR Department.
(e) be ready to be on probation for one year.
If a candidate satisfies all the criteria except
(i) at (c) above, but is a Commerce graduate with minimum 75% marks and has been working in HR department for at least last five years, his/her case is to be referred to the General Manager.
(ii) at (d) above, but has scored minimum 75% in post graduation (MBA-HR) and has a minimum of two years of experience in HR, his/her case is to be referred to the Director.
In question below, details of a candidate are provided. You have to take one of the following courses of action based on the information provided and mark the number of that course of action as your answer.
You are not to assume anything other than the information provided in each question. All these cases are given to you as on 01-07-2021.
Ramesh is a commerce graduate with 76% marks and has completed MBA in HR. He was born on 01-04-1994 and has four years' experience as a Senior HR Manager. He is ready to join on one-year probation.

(a) The candidate is selected.

(b) The candidate is to be referred to the General Manager.

(c) The candidate is to be referred to the Director.

(d) The candidate is not selected.

Answer: (a)

9. A software company has decided to rec[illegible]ers. The following criteria is to be applied. A candidate must (i) be an engineering graduate [illegible]t least 70% marks in graduation and 80% marks in HSC.
(ii) have work experience of minimum 2 year.
(iii) be ready to sign a bond of three years.
(iv) not be more than 25 years and not less than 22 years as on 1.7.2021.
However, if the candidate fulfils all the above criteria except
(a) (i), but has obtained 85% in HSC and has at least three years experience of working, the case may be referred to the Director.
(b) (iii), but is willing to pay an amount of 2 lakh, if he is required to leave- the case may be referred to the HR.
In question below, details one candidate are given. You have to take one of the following courses of action based on the information provided and mark the number of that course of action as your answer. The reference date is 1.7.2021.
Kaushal is a Software Engineer and has been working as an Assistant Engineer for the past three years. He had scored 68% and 85% marks in graduation and HSC respectively. He has just completed 25 years of age. He is ready to sign a bond of three years.

(a) The candidate is to be selected.

(b) The candidate is not to be selected.

(c) The case is to be referred to the Director.

(d) The case is to be referred to the HR.

Answer: (c)

10. Find the missing number in the given series:
100, 221, 77, 246, 50, _____.

(a) 245

(b) 275

(c) 265

(d) 255

Answer: (b)

11. The following question is based on the five three-digit numbers given below.
513 485 625 724 541
If 2 is added to the last digit of each number and then the positions of the first and the third digits are interchanged, which of the following will be the highest number?

(a) 513

(b) 485

(c) 625

(d) 724

Answer: (b)

12. If each of the odd digits in the number 6482437 is increased by '1' and each of the even digits is decreased by '2', then which of the following will be the sum of the digits of the number?

(a) 27

(b) 26

(c) 28

(d) 31

Answer: (b)

13. Pointing to the photograph of Neha, Nikhil said, "Her mother's father's son's wife is my mother-in-law's only daughter". How is Nikhil related to Neha's mother?

(a) Paternal uncle

(b) Paternal grandfather

(c) Brother

(d) Maternal uncle

Answer: (c)

14. A, B, R, D, I, S, and T are sitting around a circular table facing away from the circle. A does not sit adjacent to I and T. B does not sit adjacent to A. R sits fourth to the left of A. D and B sit adjacent to each other. T sits second to the left of I. Who sits exactly between T and A ?

(a) B

(b) R

(c) D

(d) S

Answer: (d)

15. Arti deposited equal sum of money in two different banks, one at compound interest, compounded annually and the other at simple interest, both at 10% per annum. If after two years, the difference in the amounts comes to Rs. 400, what are the amounts deposited with each bank?

(a) Rs. 20000
(b) Rs. 40000
(c) Rs. 45000
(d) Rs. 50000

Answer: (b)

General Awareness

21. SwabSeq is related to the corona virus, it is a:

(a) Vaccine
(b) A testing platform
(c) Mini testing kit
(d) Preventive medicine

Answer: (b)

22. As of August 2021, who is the Lieutenant Governor of Delhi?

(a) Shri P.S. Sreedharan Pillai
(b) Anil Baijal
(c) Bhagat Singh Koshyari
(d) Najeeb Jung

Answer: (b)

23. The third battle of Panipat was fought bet.

(a) Samrat Hem Chandra Vikramaditya, popularly called Hemu and Akbar
(b) Maratha Empire and Akbar
(c) Babur and the Lodi Empire
(d) Maratha Empire and Ahmad Shah Durrani

Answer: (d)

24. Who won the Battle of Plassey?

(a) Akbar
(b) Sirāj al-Dawla
(c) Robert Clive
(d) Babur

Answer: (c)

25. What is the minimum age limit to be a Lok Sabha candidate?

(a) 25 years
(b) 45 years
(c) 30 years
(d) 35 years

Answer: (a)

26. Article 14 is related to:
    (a) Right against exploitation
    (b) Right to equality
    (c) Right to property
    (d) Right to freedom of religion

    Answer: (b)

27. In India, National Sports Day is celebrated on which day?
    (a) 19th August
    (b) 9th August
    (c) 15th August
    (d) 29th August

    Answer: (d)

28. Last, in which year India won the Cricket World Cup?
    (a) 2011
    (b) 2015
    (c) 1995
    (d) 2019

    Answer: (a)

29. The Jnanpith award is given in which of the follow field?
    (a) Best direction in short Hindi films
    (b) Best creative literary writing
    (c) Best direction in regional films
    (d) Best paintings

    Answer: (b)

30. Which of the following is not a writer?
    (a) Chetan Bhagat
    (b) Maqbool Fida Husain
    (c) Ruskin Bond
    (d) Arundhati Roy

    Answer: (b)

31. Which is the second-highest mountain on Earth?
    (a) Mount Everest
    (b) Altai Mountains
    (c) K2
    (d) Hindu Raj

    Answer: (c)

32. The approximate height of the World's highest mountain "Mount Everest" is:

(a) 8,600.00m

(b) 8,800.86 m

(c) 8,748.76m

(d) 8,848.86m

Answer: (d)

33. Recently, the RBI announced individuals and businesses can opt for loan restructuring options for up to Rs 25 crore dues under which framework?

(a) Resolution framework 1.0

(b) Resolution framework 2.0

(c) Resolution framework 3.0

(d) Resolution framework 4.0

Answer: (b)

34. Which type of soil is the most fertile?

(a) Red soils

(b) Porous loamy soils

(c) Sand soils

(d) Clay soils

Answer: (b)

35. The ozone layer is the common term for the high ncentration of ozone that is found in the _____ around 15–30km above the earth's surf .

(a) troposphere

(b) stratosphere

(c) mesosphere

(d) thermosphere

Answer: (b)

36. Recently, Union Health Minister Harsh Vardhan gave news about the FELUDA paper strip test, this test strips will be used to diagnose:

(a) H1N1

(b) SARS-CoV-2

(c) Japanese encephalitis

(d) Dengue fever

Answer: (b)

37. The vaccine for Covid -19 was developed by the Bharat Biotech in collaboration with the Indian Council of Medical Research (ICMR) - National Institute of Virology (NIV), which vaccine is this?

(a) Covishield

(b) Moderna

(c) Covaxin

(d) Sputnik V

Answer: (c)

38. The headquarter of the International Criminal Court (ICC) is located in:
    (a) Netherlands
    (b) Japan
    (c) Pakistan
    (d) India
    Answer: (a)

39. Which of the former Presidents was awarded Bharat Ratna recently?
    (a) Giani Zail Singh
    (b) Pranab Kumar Mukherjee
    (c) Sarvepalli Radhakrishnan
    (d) A. P. J. Abdul Kalam
    Answer: (b)

40. Which Legendary actor breathed his last in July 2021 after a long illness?
    (a) Rinku Singh Nikumbh
    (b) Raj Kaushal
    (c) Irrfan Khan
    (d) Dilip Kumar
    Answer: (d)

Arithmetic Ability

41. A number 9876X3 is divisible by 3. What are the possible values of X?
    (a) 0,3,6,9
    (b) 3,6,9
    (c) 6,9
    (d) 0,3,6
    Answer: (a)

42. What is the product of: 0.03×0.0003×3×0.00003×0.3
    (a) 0.000000000243
    (b) 0.00000000243
    (c) 0.0000000000243
    (d) 0.0000000243
    Answer: (a)

43. Simplify:
(5/7×2/3×9/8×3/4×7/9)/(8/5×6/7×7/8×5/7)
    (a) 0.36
    (b) 0.30
    (c) 0.35
    (d) 0.37
    Answer: (a)

44. What is the smallest number that leaves a remainder of 7, 17 and 23 when divided by 12, 22 and 28?

(a) 1843
(b) 1834
(c) 1438
(d) 1483

Answer: (a)

45. Two numbers are in the ratio 5:7 such that their LCM is 175. Find the HCF of those numbers.

(a) 5
(b) 4
(c) 3
(d) 2

Answer: (a)

46. P = 64, Q = 2 and R = 4. If P varies directly as the square of Q and inversely as the square of R then what is the value of P for Q = 4 and R = 8?

(a) 36
(b) 16
(c) 64
(d) 63

Answer: (c)

47. If $81x^2-126xy+49y^2 = 0$ then find the ratio of y:x

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

Answer: (b)

48. The population of a town is 78960000. If it increases at a rate of 8% p.a. then what is the population after 2 years?

(a) 92098449
(b) 92098494
(c) 92098495
(d) 92098944

Answer: (d)

49. If A's salary is 17% more than of B's salary then how many percent is B's salary less than A's?

(a) 14.53%
(b) 13.0%
(c) 14.0%
(d) 15.0%

Answer: (a)

50. If the average of 4 consecutive even numbers is 55 then what is the largest number?

(a) 50
(b) 52
(c) 58
(d) 54

Answer: (c)

51. A man plays 21 innings of cricket. The average runs of 21 innings is 4 runs more than the average runs of 20 innings. He scored 95 runs is 21 innings. What is the average of all the innings?

(a) 15
(b) 51
(c) 14
(d) 50

Answer: (a)

52. A shopkeeper increased the price of an article by Rs. 1710. He made a profit of 6% instead of making a loss of 13%. What is the cost price of the article?

(a) Rs. 9540
(b) Rs. 9000
(c) Rs. 9500
(d) Rs. 9300

Answer: (b)

53. P sells to Q an article at 15% profit. Q sells it to R at 20% loss. R sells it to S at 25% profit and finally T receives it at 320896 were S makes 20% profit. What is the amount that P paid for it?

(a) Rs. 2560
(b) Rs. 25600
(c) Rs. 256000
(d) Rs. 256

Answer: (c)

54. The shopkeeper marked a good at 34% over it's cost price. After that he gave a 40% discount. Did he make a loss? What is the percentage of such profit or loss?

(a) 20%
(b) 19%
(c) 19.6%
(d) 18%

Answer: (c)

55. If Rs. 700000 becomes Rs. 824057.5 in sometime at 8.5% p.a. then what is the duration for which the sum has been compounded (in years)?

(a) 1

(b) 2

(c) 3

(d) 4

Answer: (b)

56. Find the number of spheres of radius 1.4 cm that can be made from a big sphere of diameter of 42 cm.

(a) 3375

(b) 3357

(c) 3573

(d) 3753

Answer: (a)

57. P and Q can do a work in 6 days. Q and R can do the same work in 8 days while R and P can do it in 10 days. They did the work for 3 days and then P left. How long will Q and R take if they work together?

(a) 3 days

(b) 3.1 days

(c) 3.2 days

(d) 3.3 days

Answer: (d)

58. Two trains that are 125m long and 150m long travelling towards each other at the parallel tracks. The speed of the trains are 50kmph and 60kmph. How many seconds will it take for the trains to cross each other?

(a) 9 secs

(b) 10 secs

(c) 6 secs

(d) 5 secs

Answer: (a)

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'.
The extravagant emphasis having laying on purely / intellectual education and the consequent neglect of physical training must / necessarily lead to depressing thoughts in the youth.

(a) The extravagant emphasis having laying on purely

(b) intellectual education and the consequent neglect of physical training must

(c) necessarily lead to depressing thoughts in the youth.

(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'.
See, its the punching people in the face / that's the problem, not the anger; anger / is merely the messenger.

(a) See, its the punching people in the face

(b) that's the problem, not the anger; anger

(c) is merely the messenger.

(d) No Error

Answer: (a)

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.
(Why do all this talk of hedgehogs) and foxes have to do with good to great?

(a) Why does all this talk of hedgehogs

(b) What do all these talk of hedgehogs

(c) What does all this talk of hedgehogs

(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.
(Building a culture surrounding all idea of freedom) and responsibility, within a framework.

(a) Building cultures commiting around all ideas freedom

(b) Build a culture around the idea of fr

(c) Built a culture around all idea of freedom

(d) No correction required.

Answer: (b)

65. Fill in the blank with the most appropriate choice.
The whole party system as it had _____ existed was not the kind of face that can restore the German nation or repair the damages.

(a) hitherto

(b) scantily

(c) sacramentally

(d) institutionally

Answer: (a)

66. The sentences below are not complete. There are four options for each question. Choose the best words to complete the sentence.
These values are _____ and _____ and engage you with the world as it is rather than how you wish it were.

(a) increasingly and abundant

(b) immediate and controllable

(c) rich and sacrifice

(d) superstitious and clarifying

Answer: (b)

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.
Basketball is a team sport
P. opposing one another on a rectangular court,
Q. in which two teams, most commonly of five players each,
R. compete with the primary objective of shooting a basketball through the defender's
S. hoop (a basket 18 inches in diameter mounted 10 feet high to a backboard at each end of the court) while preventing the opposing team from shooting through their own hoop.

(a) QPRS

(b) SRQP

(c) PSRQ

(d) RQSP

Answer: (a)

68. The question below consist of a set of [illegible]ntences. Out of four options given, select the most logical order of the sentences which for[illegible]ragraph.
Cricket is a bat-and-ball game played between two teams of eleven players on a field at the centre of which is a 22-yard pitch with a wicket at each end, each comprising two bails balanced on three stumps.
P When ten batters have been dismissed, the innings ends and the teams swap roles.
Q. Means of dismissal include being bowled, when the ball hits the stumps and dislodges the bails, and by the fielding side either catching the ball after it is hit by the bat and before it hits the ground, or hitting a wicket with the ball before a batter can cross the crease in front of the wicket.
R. The bowling and fielding side tries to prevent this and dismiss each batter (so they are "out").
S. The batting side scores runs by striking the ball bowled at the wicket with the bat.
The game is adjudicated by two umpires, aided by a third umpire and match referee in international matches.

(a) RSPQ

(b) PRQS

(c) SRQP

(d) QRSP

Answer: (c)

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

(a) SCEPTICAL
(b) HANDKERCHEIF
(c) PHARAOH
(d) RECOMMEND

Answer: (b)

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

(a) PRUDENT
(b) PRECISE
(c) PREDOMINANT
(d) LOOSE

Answer: (a)

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

(a) ACCORD
(b) ANTAGONISM
(c) ASSIMILATE
(d) COUNTERATTACK

Answer: (b)

72. Select the word that is opposite in mea[illegible] (A[illegible]ONYM) to the word given below.
FOOLHARDY

(a) RECKLESS
(b) IMPRUDENT
(c) ENLIGHTENED
(d) INCAUTIOUS

Answer: (c)

73. Select the most appropriate 'one word ' for the expressions given below.
A large group of fish swimming together, but not in unison or in any coordinated formation.

(a) Shoal of fish
(b) Parade of fish
(c) School of fish
(d) Bale of fish

Answer: (a)

74. Select the most appropriate idiom for the given sentence.
To enjoy yourself very much.

(a) Wallflower

(b) Hold your horses.

(c) Have a whale of a time.

(d) A plum job.

Answer: (c)

75. Select the most appropriate meaning of the given proverb.
Shoemaker, stick to your last.

(a) Do not criticize anything that you have no idea about. Stick to what you know about.

(b) Even those who keep postponing their obligations will not let them disappear.

(c) People without similarities appear attractive to each other.

(d) Damage caused must be paid for in the same amount.

Answer: (a)

Discipline1

101. How many types of inflection points are there in first and second derivatives?

(a) 1

(b) 3

(c) 2

(d) 5

Answer: (c)

102. Inflection point for f(x) = x4 -4x^3 - is :-

(a) x=1

(b) x=4

(c) x=0

(d) x=6

Answer: (c)

103. The first derivative tells us about _____.

(a) concavity

(b) convexity

(c) slope

(d) parabolic property

Answer: (c)

104. For local maxima sign of first derivative changes from_____.

(a) (- → +)

(b) (+ → -)

(c) (- → -)

(d) (+→ +)

Answer: (b)

105. The curve y= x^3-2x+5 has_____

(a) Concave up shape

(b) Concave down shape

(c) Convex up shape

(d) Convex down shape

Answer: (b)

106. Formula for rotation of curve about x-axis is :-

(a) V = $\int x1^{x2} \prod y^2$ dx

(b) v = $\int x1^{x2} \prod x^2 dy$

(c) v = $\int y2^{y1} \prod x^2 dy$

(d) v = 0

Answer: (a)

107. Find the volume of solid generated by revolution of the loop at the curve about x-axis :- $3ay^2 = x(x-a)^2$

(a) $\prod a^3/_{36}$

(b) $\prod a^3/_6$

(c) $\prod a/36$

(d) $\prod a/6$

Answer: (a)

108. Which is the example of level surface -

(a) plane surface

(b) isothermal surface

(c) curved surface

(d) hyperbolic surface

Answer: (b)

109. If flux entering any element of space is the same as that of leaving it i.e. Div. v=0 everywhere, then such a vector point function is called -

(a) curl

(b) divergence

(c) solenoidal

(d) gradient

Answer: (c)

110. The commutative law for any two complex numbers z1 and z2:

(a) z1 + z2 =z1- z2

(b) z1 + z2 =z2 + z1

(c) z1- z2 = z2 + z1

(d) z1 - z2 = z2 - z1

Answer: (b)

111. The polynomial equation of n degree has _____ roots .

(a) 1

(b) 3

(c) 4

(d) n

Answer: (d)

113. Which is not a property of equivalence relation?

(a) associativity

(b) reflexive

(c) symmetric

(d) transitive

Answer: (a)

114. An element α of a ring is said to be nilpotent if _____.

(a) $\alpha^m = 1$ for some $m > 1$

(b) $\alpha^m = 0$ for some $m > 1$

(c) $\alpha = 1$ for some $n = 0$

(d) $\alpha^m = 2$ for some $m > 1$

Answer: (b)

115. Number theory , concerned with the properties o

(a) negative integer

(b) positive integer

(c) irrational number

(d) both negative

Answer: (b)

116. Let a, b be integer , not both 0 , then there are integers u,v such that :-

(a) gcd(a, b) = ua +vb

(b) gcd (b, a) =ua -vb

(c) gcd (a,a) = ua+ vb

(d) gcd (a ,b) = va -ub

Answer: (a)

117. The matrix is said to be in reduced row echelon form if the leading coefficient in each row is :-

(a) only non zero number

(b) zero

(c) any variable

(d) any number

Answer: (a)

118. The reduced row echelon form of every matrix is :-

(a) 1

(b) 0

(c) infinite

(d) unique

Answer: (d)

119. Which of the following condition is not satisfied by a matrix in row echelon form?

(a) the first non zero element in each row , called the leading entry, is 1.

(b) each leading entry is in the column to the right of leading entry in the previous row .

(c) rows with all zero elements , if any, are below rows having a zero element .

(d) rows with all zero elements , if any are below rows having a non zero element

Answer: (c)

120. Which of the following is not a Peanos postulate?

(a) N is empty.

(b) Associated with each natural number n there is a unique natural no.n' called the successor of

(c) There is a natural no. n that is not the successor of any natural no.

(d) The only subset of N that contains x and the successors of all its elements is N itself

Answer: (a)

Discipline2

121. Suppose that f (n+1) exists on an open interval ıout x0 , and let x be in I. Then the remainder is :-

(a) R (x) = f(x) - T (x) n n

(b) R (x) = f(x) +T (x) n n

(c) R (x) = 0 n

(d) R (x) = f(x) n

Answer: (a)

123. Every non-empty set that is bounded above has :-

(a) unique greatest lower bound

(b) unique least upper bound

(c) order of supremum

(d) order of infimum

Answer: (b)

124. The golden ratio is :-

(a) ϕ-1 = 1 / ϕ

(b) ϕ+1 =1 / ϕ

(c) ϕ =1 / ϕ

(d) ϕ+2 = ϕ / 2

Answer: (a)

125. Every bounded sequence of real numbers has a convergent subsequence.

(a) Taylor's theorem
(b) Bolzano -Weierstrass theorem
(c) mean value theorem
(d) theorem of continuity

Answer: (b)

126. Which of the following is the property of limits?

(a) monotonicity
(b) associativity
(c) commutativity
(d) closure

Answer: (a)

127. Sequence whose elements become arbitrary close to each other as the sequence progresses are:-

(a) monotone sequence
(b) direct sequence
(c) cauchy sequence
(d) molecule

Answer: (c)

128. An alternating series will converges if the terms converge to _____ monotonically. n

(a) 1
(b) 0
(c) -1
(d) infinity

Answer: (b)

129. If the limit of the summand is undefined or non zero, the series must:-

(a) diverge
(b) converge
(c) remains constant
(d) first diverges then converges

Answer: (a)

130. What is the order of the differential equation $y'-4y = x- 3x^2+4$?

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

Answer: (b)

131. The particular solution to the differential equation y' =2x passing through (2,7) is _____.

(a) $y = x^2 + 2$

(b) y=0

(c) $y = x^2 + 3$

(d) $y = x^2 + 1$

Answer: (c)

132. Differential equation describing exponential growth is :-

(a) dN/dt = rN

(b) (dN/dt) =N

(c) dN/dt = r

(d) dt/dN = rN

Answer: (a)

133. A differential equation that incorporates both the threshold population T and carrying capacity .

(a) dp/dt = r P (1 - P/K) (1 - P/T)

(b) dt/dp = r(1 - P/K) (1 - P/T)

(c) dp/dt = (1 - P/K) (1+ P/T)

(d) dp/dt = 0

Answer: (a)

134. The constant r> 0 in the exponential growth func ı - $p(t) = p0e^{rt}$ -

(a) carrying capacity

(b) growth rate

(c) phase line

(d) threshold population

Answer: (b)

135. Solution of differential equation d^2y/dx^2 - 8 dy/dx +15 y = 0 is -_____.

(a) y = e 3x - e -3x

(b) y = C e 3x + C e 5x 1 2

(c) y = C e 4x - C e 5x 1 2

(d) y = C e 7x - C e 6x 1 1

Answer: (b)

136. Solution of the differential equation d^2y/dx^2 +dy/dx -2y = e^x is -_____.

(a) $y = e^{-2x}$

(b) $y = e^x + x e^x/3$

(c) $y = c1\, e^{-2x} + c2\, e^x + xe^x/3$

(d) $y = xe^x/3$

Answer: (c)

137. Solution of differential equation y' + 3y = 6x +11 is :-

(a) $y = e^{-3x}$

(b) $y = e^{-3x} + 2x + 3$

(c) y = 2x+ 3

(d) $y = e^{3x} + 2x + 3$

Answer: (b)

138. Bernoulli equation has the form -_____.

(a) y' = a(t) y + b(t) yn

(b) y' = a (t) y - b (t)

(c) y' = b(t) y -a (t) yn

(d) y' = b (t) y

Answer: (a)

139. Which is not a property of continuous functions on closed and bounded intervals?

(a) uniform continuity

(b) non - uniform continuity criteria

(c) uniform continuity theorem

(d) divergence criteria

Answer: (d)

140. If we have a sequence $(yn)_{\infty}$ n =1 , it means for sequence to have a limit as n tends to infinity. It can be written as _____.

(a) y →1 as n → ∞ n

(b) y →1 as n→ 0 n

(c) y →n as n→ 0 n

(d) y →n as n→ 1 1

Answer: (a)

Discipline3

141. Evaluate lim x→0 x^3 cot x⁄(1 - cos x).

(a) 1

(b) 3

(c) 2

(d) 5

Answer: (c)

142. A continuous function v is said to be negative definite, if _____.

(a) v is negative definite

(b) v is positive definite

(c) (-v is positive definite)

(d) (- v is negative definite)

Answer: (c)

143. A continuous function v: Rn → R is said to bev radially unbounded if _____.

(a) v (0) ≠ 0

(b) v(0) =0

(c) v(0) = ∞

(d) v(0) = 1

Answer: (b)

144. A function f(x) is said to be continuous at a point x =c if the following condition hold true:

(a) f (x) is defined at x= c

(b) f(x) ≠ 0

(c) f(x) ≠ f (c)

(d) x=c

Answer: (a)

146. Functions which are increasing and decreasing in their domain are said to be _____.

(a) monotonic

(b) non- monotonic

(c) maxima

(d) minima

Answer: (a)

147. All of computational science is built on _____ _.

(a) Rolle's theorem

(b) Taylor's theorem

(c) mean value theorem

(d) remainder theorem

Answer: (b)

148. Taylor's theorem is not used to study the properties of _____.

(a) evaluating definite integral

(b) understanding asymptotic behaviour

(c) understanding the growth of functions

(d) on solving quadratic eqn.

Answer: (d)

149. The Maclaurin series are used to approximate the _____.

(a) Lorentz factor α

(b) Lorentz factor Y

(c) Lorentz factor ϭ

(d) momentum

Answer: (b)

150. The multivariable chain rule is _____.

(a) df/dx = (df/dt).(dt/dx)

(b) dx/dt = (df/dt) .(dt/dx)

(c) dy/df = (df/dt) . (dt/dy)

(d) df/dx = (dx/df) .(df/dt)

Answer: (a)

151. If z = x4 e^{3y}. Find dz.

(a) dz = $4x^3e^{3y}$ dx + $3\times4e^{3y}$ dy

(b) dz = $4x^3e^{3y}$dy - $3\times4e^{3y}$dy

(c) dz = $4x^3e^{3y}$ dx

(d) dz = $3\times4e^{3y}$dy

Answer: (a)

152. A vector field in Rn is a function :-

(a) F vector : Rn→R n

(b) F vector→R n:Rn

(c) F vector →Rn

(d) F vector →0

Answer: (a)

153. Which of the following is not the property of vect ield?

(a) radial fields

(b) rotational fields

(c) electrical fields

(d) gradient field

Answer: (c)

154. Which is not the property of double integrals?

(a) commutativity

(b) area property

(c) linearity

(d) additivity

Answer: (a)

156. Green's theorem relates a double integral over a region to a _____.

(a) surface integral

(b) line integral

(c) volume integral

(d) indefinite integral

Answer: (b)

157. Green's theorem says that the total "microscopic circulation " in D is equal to the circulation around the boundary c = dD⁻

(a) F.ds

(b) ∫ F.ds

(c) ∫c F.ds

(d) ∫ -F.ds

Answer: (c)

158. The surface integral of the curl of a function over a surface bounded by a closed surface is equal to the line integral of the particular vector function around that surface is _____.

(a) Green's theorem

(b) Stoke's theorem

(c) Gauss's theorem

(d) Taylor's theorem

Answer: (b)

159. The surface integral of a vector field A over a closed surface is equal to the volume integral of the divergence of a vector field A over the volume (v) enclosed by the closed surface, is _____.

(a) Green's theorem

(b) Stoke's theorem

(c) Gauss's theorem

(d) Taylor's theorem

Answer: (c)

160. Which is not the property of Riemann inte

(a) Associativity

(b) Linearity

(c) monotonicity

(d) additivity

Answer: (a)

Discipline4

161. Every continuous real - valued function on each closed bounded interval is _____.

(a) Riemann integrable

(b) upper Riemann integral

(c) lower Riemann integral

(d) Riemann sums

Answer: (a)

163. If either limit of a definite integral is infinite or if the integrand is infinite anywhere inside the range of integration , the integral is said to be _____.

(a) proper integral

(b) improper integral

(c) lower Riemann integral

(d) upper Riemann integral

Answer: (b)

166. Let W $\subset$ c be a domain and suppose {fn} is a sequence of analytic functions on W to f, then f is analytic on _____.

(a) c

(b) W

(c) c and W

(d) fn

Answer: (b)

167. A sequence of functions is a sequence with functions as elements . Fn: D $\rightarrow$ R is defined on set _____.

(a) D $\subseteq$ R

(b) D $\subset$ R

(c) R $\subset$ D

(d) D$\cap$ R

Answer: (a)

170. Which property is not satisfied by met -pac

(a) non- negativeness

(b) identification

(c) monotonicity

(d) symmetry

Answer: (b)

171. If there is at least one geodesic path between every pair of points in x. Then (x , d) is called _____.

(a) path length

(b) geodesic space

(c) geodesic segment

(d) Brownian bridge

Answer: (b)

173. Let X be a topological space. Which of the following condition does not hold?

(a) ϕ and X are closed

(b) finite unions of closed sets are closed .

(c) finite unions of closed sets are not closed .

(d) arbitrary intersections of closed set are closed.

Answer: (c)

174. Let X = R^2 and d : X × x → R is defined by d [(x1 ,x2) (y1, y2)]½. Then points inside the circle centred at _____.

(a) (1 , 0)

(b) (0 , 0)

(c) (2 , 0)

(d) (1 , 1)

Answer: (b)

176. A function f : A→ B is continuous if and only if _____.

(a) G is closed

(b) G is open

(c) G = 0

(d) f(G) is closed

Answer: (b)

178. If a finite subcover of s is contained in each open cover of any set S , then S is called _____.

(a) compact set

(b) empty set

(c) equivalent set

(d) finite set

Answer: (a)

179. Every open cover of a closed and bounded sub . S of real numbers contains a finite subcover of S , i.e. , every closed and bounded subs f R i ompact, is known as _____.

(a) Fundamental theorem

(b) De Moivre's theorem

(c) Four squares theorem

(d) Heine- burel theorem

Answer: (d)

180. Which of the following condition is correct for a mapping f : G→ G is called automorphism of G is _____.

(a) f(a,b) = f(b)

(b) f is a bijection

(c) f(a,b) = 0

(d) f(b,a) = f(a)

Answer: (b)

Discipline5

182. If A , B $\subset$ X and A × B $\cong$ X, then we say that X is _____.

(a) an external direct product

(b) an internal direct product

(c) antisymmetric product

(d) cartesian product

Answer: (a)

183. Which is the correct option for internal direct product?

(a) H1, H2 $\subset$ G

(b) K4 × Z3

(c) S3× Z4

(d) H1 $\subset$ H2

Answer: (a)

185. Every finite group G can be embedded in a symmetric group is _____.

(a) Cayley theorem

(b) Taylor's theorem

(c) Green's theorem

(d) Gauss divergence theorem

Answer: (a)

186. Which statement is not correct when H acts on G left multiplication?

(a) there are no fixed points (if H≠ G).

(b) the orbits are the right H- cosets.

(c) staba = { h :ha = a } = {e} is trivial.

(d) there are no fixed points { if [H] > 1 }

Answer: (a)

187. Let G be a finite group and P be a prime factor of |G|. Then some element of G has order P is _____.

(a) Cauchy theorem

(b) Cayley theorem

(c) Taylor's theorem

(d) Green's theorem

Answer: (a)

188. Let G be a finite group of order n = p k m , where p is a prime and p does not divide m. A subgroup H of order p k is called_____.

(a) P- group

(b) normal subgroup

(c) sylow P-subgroup

(d) simple subgroup

Answer: (c)

189. Let G be a finite group and G has only two normal subgroups {e} and G itself then it is a _____.

(a) normal P- subgroup

(b) P- group

(c) simple group

(d) sylow P- subgroup

Answer: (c)

190. Which of the following is not the property of continuous function if f(z) and g(z) are continuous on a region A, then _____.

(a) f(z) + g(z) is continuous on A .

(b) (z) - g(z) is continuous on A .

(c) f(z) g(z) is continuous on p.

(d) f(z)/g(z) is continuous on A except at points where g(z) = 0

Answer: (b)

Teaching Methodology

191. Collaborative projects of the methods of teaching will encourage which learning?

(a) Direct learning

(b) Indirect learning

(c) primary learning

(d) secondary learning

Answer: (b)

192. Effectiveness of teaching has to be judge[illegible]rms of ____.

(a) Course coverage

(b) Students' interest

(c) Use of teaching aids in the classroom

(d) efficiency of the candidate in securing good marks

Answer: (d)

193. In a classroom , translanguaging may not involve which of the following ?

(a) translating between languages

(b) comparing and being playful with different languages

(c) using school language compulsorily in whole part of the activity

(d) mixing words and expressions from different languages in the same spoken or written utterance

Answer: (c)

194. _____ is a branch of learning or scholarly investigation that provides a structure for the students' (program of study,) especially in the graduate and post-graduate levels.

(a) Multi discipline

(b) Academic Discipline

(c) Non academic discipline

(d) Unitary discipline

Answer: (b)

195. Some boys and girls are born with a condition called congenital adrenal hyperplasia (CAH),which cause them which of the following?

(a) to have significantly higher levels of androgens than their non-affected peers

(b) to care less about their physical appearance than the others

(c) to avoid having girl or boy playmates; do not play games revolving around stereotypical feminine events

(d) to strongly influence girls to behave as though they were boys or vice versa.

Answer: (a)

196. Why do children tend to imitate and internalise what they see and then repeat those patterns in their own lives?

(a) Because they were taught that certain traits or activities are appropriate or inappropriate for them to engage

(b) Because they are strongly influenced by paren generations.

(c) Because Children learn vicariously through th observation and imitation of what they see their primary caregivers are doing

(d) Because they more likely to take on se r s themselves as adults than are peers whose parents were less stereotyped.

Answer: (c)

197. In Language as a school Subject which is not Methodology of teaching ?

(a) Teacher oriented

(b) Form focused

(c) Function oriented

(d) Product oriented

Answer: (c)

198. Which knowledge is dependent on experience or empirical evidence, as with most aspects of science and personal knowledge?

(a) Practitioner knowledge

(b) Priori Knowledge

(c) Posteriori Knowledge

(d) Communicating knowledge

Answer: (c)

199. _____ involves students
providing feedback to other students on the quality of their work.

(a) Self-assessment

(b) Peer assessment

(c) Collaborative assessment

(d) Group assessment

Answer: (b)

200. The RTE Act provides for the right of children to free and compulsory education to the children of ____ years age group including children with special needs.

(a) 6 to 14

(b) 3 to 14

(c) 6 to 18

(d) 3 to 18

Answer: (a)

Answer key

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

General Ability

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

General Awareness

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

Arithmetic Ability

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

General English

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

Discipline1

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

Discipline2

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

Discipline3

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

Discipline4

161	**(a)**	163	**(b)**	166	**(b)**	167	**(a)**	170	**(b)**	171	**(b)**	173	**(c)**	174	**(b)**
176	**(b)**	178	**(a)**	179	**(d)**	180	**(b)**								

Discipline5

182	**(a)**	183	**(a)**	185	**(a)**	186	**(a)**	187	**(a)**	188	**(c)**	189	**(c)**	190	**(b)**

Teaching Methodology

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