PREVIOUS YEAR PAPER

DSSSB TGT Maths (Male) 2021 — 2 September 2021, Shift 1

DSSSB TGT · 2 September 2021 · Shift 1

163 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: 37 (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 1. 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-1/

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.
56 : 67 :: 42 : ?

(a) 47
(b) 60
(c) 48
(d) 76

Answer: (c)

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) 36 - 49
(b) 64 - 81
(c) 16 - 25
(d) 49 - 81

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) ISRO
(b) NASA
(c) WHO
(d) JAXA

Answer: (c)

4. Complete the following letter series:
JKS, EPN, ZUI, ___

(a) UZD

(b) VZD

(c) UZC

(d) UAD

Answer: (a)

5. Find the wrong term in the given series.
AC, BE, EI, JO, QV

(a) EI

(b) JO

(c) QV

(d) BE

Answer: (c)

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:
$T \leq M = R > K > O$; $U \geq O$
Conclusions:
I. $R > U$
II. $R > T$

(a) Only conclusion I follows

(b) Only conclusion II follows

(c) Either conclusion I or II follow

(d) None follows

Answer: (d)

7. Among seven persons P, Q, R, S, T, U and V, who are of different ages, V is younger than only S and T. U is younger to Q and older than P. T is not the eldest and R is the youngest. Who is the fourth oldest?

(a) Q

(b) U

(c) R

(d) S

Answer: (a)

8. The following are the conditions for selecting Marketing Manager for a PSU.
The candidate must:
a) Had done MBA in Marketing with at least 65% marks.
b) Not be more than 28 years old and less than 24 years old as on 1.12.2021.
c) Have fluency in English.
d) Be in a position to pay Rs. 1,00,000/- as deposit to the company.
e) have an experience of at least 3 years.
In the case of candidate who fulfils all the conditions
except I) at (a) above, he should be referred to Managing Director of the company.
II) At (d) and/or (e) above, he should be referred to Chairman of the company.
Now read the information provided in the question and mark your answer accordingly.
Utkarsh who was born at 1-04-1995 is a Post-Graduate (MBA) in Marketing with 70% marks. He is not fluent in English. He has a work experience of 4 years. He can pay the required deposit.

(a) The candidate is selected.

(b) The candidate is not selected.

(c) The candidate is referred to Managing Director.

(d) The candidate is referred to chairman.

Answer: (b)

9. Read the following information to answer the given question. Following are the criteria for selecting Mathematics teacher by a school. The candidate:
1. Must have done post graduation in Mathematics with at least 70% marks.
2. Should have good aptitude skills with fluency in English.
3. Must be between 23 to 27 years of age.
4. Must have at least 2 years of related work experience.
In the case of Candidate who fulfils all conditions except-
(a) At (1) above, but has at least 4 years of experience in Mathematics, his/her case to be referred to HOD.
(b) At (4) above , but has done post graduation in Mathematics with at least 80% marks, his/her case to be referred to Principal.
In question below, details of a candidate are provided followed by a question and 4 courses of action. Select the course of action that applies to the person's candidature.
Anu has done post graduation in mathematics. She scored 65% marks in her post graduation. She has strong aptitude skills with fluency in English. She is 25 years old. She has only one year of work experience.

(a) She will be selected.

(b) She will not be selected.

(c) She will be referred to HOD.

(d) She will be referred to Principal.

Answer: (b)

10. Find the missing number in the given series:
8, 129, 210, 259, 284, ____, 294

(a) 290

(b) 291

(c) 292

(d) 293

Answer: (d)

11. The following question is based on the five three-digit numbers given below.
295 567 876 456 345
If in each number second and third digits are interchanged, then how many even numbers are there?

(a) 1

(b) 2

(c) 3

(d) 4

Answer: (b)

12. How many pairs of letters are there in the word "PRESIDENT" that have the same number of letters between them in the word in forwarding directions, as they have in the English alphabetical series?

(a) One

(b) Two

(c) Three

(d) Four

Answer: (b)

13. A's sister is the wife of B. B is C's brother. B's father is D. E is B's paternal grandmother. F is E's daughter-in-law. G is C's brother's son. How is G related to A?

(a) Son

(b) Brother

(c) Father

(d) Sister's son

Answer: (d)

14. In a circular seating arrangement, Sunil is facing outside. Esha is sitting 2nd to the right of Sunil and opposite to Farhan. Omkar and Vikram are immediate neighbours. If six peoples are sitting in the arrangement then, what is the position of Jitin with respect to Farhan, who is facing inside?

(a) 2nd to the right

(b) Immediate left

(c) Immediate right

(d) 2nd to the left

Answer: (d)

15. Pipe A can fill a tank in 15 minutes and pipe B can empty the same full tank in 6 minutes. If three-fifth of the tank is full and both the pipes are opened simultaneously, then in how many minutes will the tank be completely filled or emptied?

(a) Empty in 6 minutes
(b) Empty in 9 minutes
(c) Fill in 6 minutes
(d) Empty in 15 minutes

Answer: (a)

General Awareness

21. From the following options which day is celebrated on July 1st every year?

(a) World Civil Defence Day
(b) World Milk Day
(c) National Chartered Accountant Day
(d) Labour Day

Answer: (c)

22. Recently International Day of Yoga was celebrated on 21st June 2021 this year, what was the theme?

(a) Yoga for well-being
(b) Climate Action
(c) Yoga for Peace
(d) Yoga for Health

Answer: (a)

23. The total numbers of Vedas are:

(a) Five
(b) Four
(c) Three
(d) Seven

Answer: (b)

24. Anguttara Nikaya related to:

(a) Buddhist
(b) Jainism
(c) Hinduism
(d) Christianity

Answer: (a)

25. Twelve members are nominated in the Rajya Sabha by whom?
    (a) Prime Minister
    (b) Union Minister
    (c) Speaker of the Lok Sabha
    (d) President
    Answer: (d)

26. Which article of the Indian Constitution is related to the election of the President?
    (a) Article 23
    (b) Article 55
    (c) Article 45
    (d) Article 51
    Answer: (b)

27. Ranji Trophy is related to which sports?
    (a) Cricket
    (b) Chess
    (c) Kabbadi
    (d) Volleyball
    Answer: (a)

28. In a T20 cricket World Cup, the two teams have a gle innings each, which is restricted to a maximum of how many overs?
    (a) 30
    (b) 80
    (c) 40
    (d) 20
    Answer: (d)

29. Sunil Das, Amrita Sher-Gil, and Nandlal Bose are:
    (a) Painters
    (b) Classical singers
    (c) Actors
    (d) Scientists
    Answer: (a)

30. Pablo Picasso was one of the greatest artists of the _____.
    (a) 19th Century
    (b) 21st Century
    (c) 20th Century
    (d) 18th Century
    Answer: (c)

31. Karbi Anglong plateau is located in which area or state?
    (a) Assam
    (b) Meghalaya
    (c) Gujrat
    (d) Himachal
    Answer: (a)

32. Devprayag is a town in which city?
    (a) Himachal Pradesh
    (b) Uttarakhand
    (c) Madhya Pradesh
    (d) Gujrat
    Answer: (b)

33. The Five-year plan is now replaced with the new _____ year action plan.
    (a) Three
    (b) Ten
    (c) Two
    (d) One
    Answer: (a)

34. Which type of milk has more nourishment?
    (a) Pasteurized milk
    (b) Boiled milk
    (c) Cold milk
    (d) Unboiled milk
    Answer: (a)

35. Mainly which vitamin protects teeth?
    (a) Vitamin D
    (b) Vitamin B12
    (c) Vitamin B6
    (d) Vitamin E
    Answer: (a)

36. IAU promotes astronomical research. What is the full form of IAU?
    (a) The International Astronomical Union
    (b) The Internal Astronomical Union
    (c) The Investigation Astronomical Union
    (d) The International Astro Union
    Answer: (a)

37. Aedes is a genus of "_____".

(a) Humans
(b) Birds
(c) Mosquitoes
(d) Animals

Answer: (c)

38. Currently (As August on 2021), how many countries are permanent members of the United Nations Security Council?

(a) Ten
(b) Fifteen
(c) Twenty
(d) Five

Answer: (d)

39. Who is the author of the book "It's a wonderful life: Roads to happiness"?

(a) Umberto Eco
(b) Sidney Sheldon
(c) Bill Gates
(d) Ruskin Bond

Answer: (d)

40. Who won the pageant of Miss Universe 2020?

(a) Andrea Meza from Mexico
(b) Zozibini Tunzi from South Africa
(c) Catriona Gray from Bangkok
(d) Toni-Ann Singh from Jamaica

Answer: (a)

Arithmetic Ability

41. Simplify: 1+((2-(5-8) -1)-9+2) -1

(a) 0.78
(b) 0.79
(c) 0.8
(d) 0.77

Answer: (b)

42. If 5P+Q/2+3R+S/4+2T = 25.1916 then what is the value of P+Q+R+S+T? (The digit P is in unit's place, Q in tenth's place, R is in hundredth's place, S is in thousandth's place and T in ten thousandth's place.)

(a) 4.2334
(b) 5.2433
(c) 5.4332
(d) 5.2343

Answer: (d)

43. If a/b = 7/8 and 7a+14b+10 = 35 then what is the value of a?

(a) 25/23
(b) 23/25
(c) 20/21
(d) 21/20

Answer: (a)

44. The LCM and HCF of two numbers A and B is 225 and 5. A+B = 70. What is 1/A+1/B?

(a) 10/225
(b) 11/225
(c) 14/252
(d) 14/225

Answer: (d)

45. Find the smallest number that is when reduced [illegible]1 is divisible by 6, 12, 18 and 20.

(a) 3240
(b) 3230
(c) 3251
(d) 3250

Answer: (c)

46. There are two equations 7x+8z-9y = 5 and 9x-8z+6y = -5. What is x:y?

(a) 3:16
(b) 16:3
(c) 16:1
(d) 3:1

Answer: (a)

47. The monthly income of Rajesh and Rakesh are the in ratio 4:5. Their expenditure are in the ratio of 6:8. They both save Rs 10000 a month. What are their monthly incomes?

(a) Rs. 40000, Rs. 50000
(b) Rs. 50000, Rs. 40000
(c) Rs. 80000, Rs. 60000
(d) Rs. 60000, Rs. 80000

Answer: (a)

48. The price of rice has reduced by 20%. After the reduction, Ram is able to buy another Kg of rice. Ram has a budget of Rs.120. What is the original price?

(a) 18
(b) 12
(c) 30
(d) 24

Answer: (c)

49. If the price of the sugar is decreased by 11% then how much the consumption should be increased so that the consumption expenditure is not decreased?

(a) 12.0%
(b) 12.36%
(c) 11.0%
(d) 13.0%

Answer: (b)

50. The average of 41 numbers is 20. The average of first 20 numbers is 15 and last 20 numbers is 13. What is the 21st number?

(a) 320
(b) 290
(c) 310
(d) 260

Answer: (d)

51. What is the average of the first 13 multi[illegible] of (

(a) 36
(b) 6
(c) 3
(d) 63

Answer: (d)

52. A man sells at 11% loss but he measures 88 cm as 1 m. What is the gain or loss percentage?

(a) 1.0% loss
(b) 1.1% gain
(c) 1.2% loss
(d) 1.14% gain

Answer: (d)

53. A man marks 27% profit on the cost price. He gives a 18% discount on the list price. What is the actual gain percentage?

(a) 4.0%
(b) 4.14%
(c) 5.0%
(d) 4.5%

Answer: (b)

54. Ram sells furniture. The marked price of one chair was Rs. 24500. He gave a 17% discount to Shyam. After that Shyam bargained and took the chair at 17800. What is the second discount that Shyam got?

(a) 12.4%

(b) 12.74%

(c) 12.7%

(d) 12.47%

Answer: (d)

55. The amount after 2 years of compound interest is Rs. 9592200 and 3 years of compound interest is Rs. 10503459. What is the rate of interest and sum of money?

(a) 9.0%, Rs. 8000000

(b) 9.0%, Rs. 9000000

(c) 9.5%, Rs. 9000000

(d) 9.5%, Rs. 8000000

Answer: (d)

56. The capacity of a cylindrical box is 81466 cubic cm. The radius is 23 cm. What is the height of the box?

(a) 48 cm

(b) 50 cm

(c) 49 cm

(d) 47 cm

Answer: (c)

57. Mahesh can do a piece of work in 9 days [illegible]nesh can do the same work in 18 days. If they both work together, how long will they take to complete the work?

(a) 4 days

(b) 5 days

(c) 6 days

(d) 7 days

Answer: (c)

58. A man walks 5/7 of his usual speed and reaches 10 minutes late. Find his usual time.

(a) 52 mins

(b) 50 mins

(c) 25 mins

(d) 35 mins

Answer: (c)

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'.
If creative spirit of Periclean age be / manifested in the Parthenon, then the Bolshevist era is manifested / through its cubist grimace.

(a) If creative spirit of Periclean age be

(b) manifested in the Parthenon, then the Bolshevist era is manifested

(c) through its cubist grimace.

(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'.
As Freud once said that, 'One day, in the / retrospect, the years of struggle will / strike you as the most beautiful."

(a) As Freud once said that, 'One day, in the

(b) retrospect, the years of struggle will

(c) strike you as the most beautiful."

(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.
Thank you for inviting me but the day has been exhausting, (I will neither watch a movie or go to sleep.)

(a) I will be neither watching a movie or go to sleep.

(b) I will either watch a movie nor go to sleep.

(c) I will either watch a movie or go to sleep.

(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.
A slight warping of the sea bottom in the vicinity of Torres Strait would be (sufficient to join the New Guinea to Australia.)

(a) sufficient to join the New Guinea to the Australia.

(b) sufficient to join New Guinea to Australia.

(c) sufficient to join New Guinea to the Australia.

(d) No correction required.

Answer: (b)

65. Fill in the blank with the most appropriate choice.
These were the experiences of divinely gifted artists and not _____.

(a) bigots

(b) charlatans

(c) perceivers

(d) buffoons

Answer: (d)

66. The sentences below are not complete. There are four options for each question. Choose the best word to complete the sentence.
_____ to not respond to the event in our lives is still a response to the events in our lives.

(a) Choosing

(b) Choose

(c) Chose

(d) Choosed

Answer: (a)

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.
Pit bull is a term used in
P. the United Kingdom the term is used as an abbreviation
Q. the United States for a type of dog
R. while in other countries such as
S. descended from bulldogs and terriers,
of the American Pit Bull Terrier breed.

(a) RPQS

(b) QSRP

(c) SRQP

(d) PQRS

Answer: (b)

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.
Adobe Photoshop is a raster graphics editor developed and published by Adobe Inc. for Windows and macOS.
P. Since then, the software has become the industry standard not only in raster graphics editing, but in digital art as a whole.
Q. Photoshop can edit and compose raster images in multiple layers and supports masks, alpha compositing and several colour models including RGB, CMYK, CIELAB, spot colour, and duotone.
R. It was originally created in 1988 by Thomas and John Knoll.
S. The software's name has thus become a generic trademark, leading to its usage as a verb (e.g. "to photoshop an image", "photoshopping", and "photoshop contest") although Adobe discourages such use.
Photoshop uses its own PSD and PSB file formats to support these features.

(a) PSQR

(b) RPSQ

(c) SPRQ

(d) QPRS

Answer: (b)

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

(a) PLAYWRITE

(b) MILLENNIUM

(c) ZUCCHINI

(d) COLONEL

Answer: (a)

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

(a) VETO

(b) COMPARISON

(c) RECOGNITION

(d) MOBILIZATION

Answer: (c)

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

(a) AIRY

(b) INDELICATE

(c) SUBSTANTIAL

(d) UNREAL

Answer: (a)

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

(a) FLASHING

(b) GLOOMY

(c) GOLDEN

(d) GLITTERING

Answer: (b)

73. Select the most appropriate meaning for the word given below.
Tannery

(a) A place where grains are stored.

(b) A place where leather products are made.

(c) A large gathering of people of a particular type.

(d) A place where animal hides are treated.

Answer: (d)

74. Select the most appropriate meaning of the given idiom.
Fuddy Duddy

(a) Someone who has a funny personality.

(b) An old fashioned person.

(c) Someone who is extremely audacious.

(d) Someone who is going to be a father soon.

Answer: (b)

75. Select the most appropriate meaning of the given proverb.
Still waters run deep.

(a) In time you will find a solution.

(b) Introverts have a side to them that they keep hidden.

(c) A child adopts characteristics or behaviours from their parents.

(d) Avoid making mistakes and bad experiences over again.

Answer: (b)

Discipline1

101. If $f(x)=-x^2+3$, then by tracing it's graph find the derivative ?

(a) -2x

(b) +2x

(c) -x

(d) x

Answer: (a)

102. If sign of f'>0 , then what can you say about nature of f?

(a) f is increasing

(b) f is decreasing

(c) f neither increases nor decreasing

(d) f increases as well as decreasing

Answer: (a)

103. Find the x co-ordinate of one of the inflection points of $f(x)=x^3+x^2+1$.

(a) (1/2)

(b) (-1/2)

(c) (1/3)

(d) (-1/3)

Answer: (d)

104. Which of the following is not a Euclidean domain?

(a) Z

(b) Every field F with norm N as N(a)=1

(c) Z[i]

(d) The field of rational numbers under absolute value given by $N(a)=|a|$

Answer: (d)

105. The curve given by $x^2+y=0$ is symmetrical aroun _____.

(a) x axis

(b) y axis

(c) around the line x=y

(d) about the origin

Answer: (b)

106. The surface area of sphere $x^2+y^2+z^2=16$, is ?

(a) 4π

(b) 8π

(c) 16π

(d) 64π

Answer: (d)

107. Find the volume of curve $y=x^2$; on the x axis on interval [0,1] around x axis ?

(a) π

(b) (π/5)

(c) (π/7)

(d) 0

Answer: (b)

108. If r = xî+yj+zk be the position vector given to us , then find curl(r) ?

(a) 0

(b) 1

(c) 2

(d) 3

Answer: (a)

109. If a=î+j+2k ; b=î-j-k be the two vectors given to us , then find the value of cosine of angle between them ?

(a) 0.4713

(b) -0.4713

(c) 0.3556

(d) -0.3556

Answer: (b)

110. Find grad(f) if $f(x,y,z)=xy+y^2z$ at the point (0,1,-1) ?

(a) î-2j+k

(b) î+2j+k

(c) î-j-k

(d) 2i+j+k

Answer: (a)

111. When p(z) divides the line joining the points A ar in the ratio m:n internally then z is given by what?

(a) $(mz^2+nz^1)/(m+n)$

(b) $(mz^2-nz^1)/(m-n)$

(c) m+n+mn

(d) m+n-mn

Answer: (a)

112. If z=1+3i, find the polynomial generated by its roots?

(a) $z^2+2z+10$

(b) $z^2-2z+10$

(c) $z^2-2z-10$

(d) $z^2+2z+20$

Answer: (b)

114. If R is a relation which connects two elements x and y such that xRy = x-y is even integer , then which of the properties of equivalence relation is satisfied here?

(a) R is symmetric

(b) R is transitive

(c) R is reflexive

(d) R is an equivalence relation

Answer: (d)

115. Find the value of (cos¢+isin¢)4/5?

(a) cos¢+isin¢

(b) cos5¢+isin5¢

(c) cos(4/5)¢+isin(4/5)¢

(d) cos(5/4)¢+isin(5/4)¢

Answer: (c)

116. If a,b,c are vertices of an equilateral triangle ,then $a^2+b^2+c^2$=_____?

(a) ab+bc+ca

(b) ab+bc-ca

(c) ab-bc-ca

(d) a/(b+c)

Answer: (a)

117. Find the polynomial whose roots are -1,1-2w,$1-2w^2$?

(a) $(x-1)^3+8$

(b) $(x-1)^3$

(c) $(x-1)^3-8$

(d) x^3+8

Answer: (a)

118. Pick the wrong statement?

(a) Equivalent matrix holds equivalence relation

(b) A is non singular if and only if AB=I or BA=I some B to be n×n matrix

(c) Elementary rows or column operato affect rank of matrix

(d) Rank of invertible idempotent matrix is n+1

Answer: (d)

120. Using row echelon form find x and y if x+2y=1;2x+y=2?

(a) (1,0)

(b) (2,0)

(c) (0,1)

(d) (0,2)

Answer: (a)

Discipline2

121. Which of the following is uncountable?

(a) The set of a rational numbers in [0,1]

(b) The unit interval [0,1]

(c) Every subset of countable set

(d) The set of all integers

Answer: (b)

122. Which theorem states that ," Between any two distinct numbers, there lies at least on rational number and hence there lies many rational numbers

(a) Density theorem

(b) Archimedean property

(c) Hahn Banach theorem

(d) Cantor's theorem

Answer: (a)

124. If f={2,2^2,2^3,...}, then check about whether it is bounded above or below or bounded or unbounded?

(a) f is bounded below by 2 but unbounded above

(b) f is unbounded

(c) f never attains its bound

(d) f is bounded above by 2 but not bounded below

Answer: (a)

125. Find the range of the sequence given by f=<(1/n)> ?

(a) {1,2,3,...}

(b) {1,1/2,1/3,...}

(c) {1,1/3,1/5.,..}

(d) zero

Answer: (b)

127. Find the terms of the sequence given by <1+1/r

(a) <1,2,3,..>

(b) <1,1/4,1/9,..>

(c) <2,5/4,10/9,...>

(d) <1,1,1,....>

Answer: (c)

128. The series given by 1/(2.3)+2/(3.4)+4/(4.5)+... is _____.

(a) convergent

(b) divergent

(c) oscillates finitely

(d) oscillates infinitely

Answer: (b)

129. The series given by 1+(1/5)+(1/5^2)+.... is _____.

(a) convergent

(b) divergent

(c) oscillates finitely

(d) oscillates infinitely

Answer: (a)

130. The series given by $1\times5, 2\times5^2, 3\times5^3, \ldots$ is a _____ series ?

(a) arithmetic series

(b) geometric series

(c) harmonic series

(d) arithmetico-geometric series

Answer: (d)

131. What kind of information is given to us in mathematical models?

(a) estimated results

(b) wrong results

(c) accurate results

(d) approximate wrong results

Answer: (a)

132. In engineering problems, there are some statement in which we have to use mathematical expression in terms of variable , function and equation ,such expression are termed as _____?

(a) ring solutions

(b) mathematical models

(c) models of time

(d) terms of continuity

Answer: (b)

133. Population growth rate is calculated by which of the following term?

(a) dN/dT=rN

(b) dN/dT=-rN

(c) dN=rN

(d) dN=-rN

Answer: (a)

134. When per capita rate increases, we take same positive value we get _____ growth?

(a) exponential

(b) logistic

(c) linguistics

(d) carrying capacity

Answer: (a)

135. Which growth curve indicates that, "living organisms is growing in natural environment"?

(a) sigmoid growth curve

(b) t curve

(c) logistic curve

(d) parametric curve

Answer: (a)

136. Solve the given differential equation $y^2dx+2xydy=0$?

(a) $xy^2=k$

(b) $yx^2=k$

(c) $xy=k$

(d) $yx^3=k$

Answer: (a)

137. Find the integrating factor of $(y-xy^2)dx-(x+x^2y)dy$?

(a) 1/2x

(b) 1/2y

(c) 1/2xy

(d) y/2x

Answer: (c)

138. Which of the following is not a type of mathematical model?

(a) abstractions

(b) heuristics

(c) insilicators

(d) presumptions

Answer: (d)

139. Which of the following is not a component of ma' .matical model?

(a) variables

(b) factors

(c) constants

(d) noise parameters

Answer: (b)

140. According to which model, top down approach focus on existing theory and begins with hypothesis Is based on ?

(a) static model

(b) dynamic model

(c) deductive model

(d) dynamic static model

Answer: (c)

Discipline3

141. Find the limit of the derivative of function $f(x,y)=xy^2/(x^2+y4)$ at the point u $(\sqrt{2},\sqrt{2})$?

(a) 0

(b) $\sqrt{2}/3$

(c) $\sqrt{3}$

(d) 2

Answer: (b)

142. If f:R to R is continuous and f(x) is continuous for every x in Q then f(x) is continuous on x in R, which theorem states this fact?

(a) Identity theorem

(b) Initial value theorem

(c) Riemann theorem

(d) Weierstrass factor theorem

Answer: (a)

143. Check about the continuity of function given by $f(x)=\sqrt{x}$ in interval [0,2] ?

(a) it is uniformly continuous

(b) it is not uniformly continuous

(c) can't say about continuity of f

(d) discontinuous everywhere

Answer: (a)

144. Check about the nature of continuity of f(x)=x/(x+1) in [0,2]?

(a) not continuous

(b) uniformly continuous

(c) not uniformly continuous

(d) continuous but not uniformly continuous

Answer: (b)

145. According to which theorem , there exists a real number C between a and b such that f'(C)=0 whenever f'(a)f'(b)<0 such that f be defined and derivable on [a,b]?

(a) Dirichilets theorem

(b) Darboux's theorem

(c) Milne theorem

(d) riesz's theorem

Answer: (b)

146. If u and v are continuous on [a,b] and have equal finite derivatives in [a,b] ,then u-v is _____.

(a) constant

(b) f/g

(c) g

(d) infinite

Answer: (a)

147. Which theorem states that," If f and g are continuous function from R to R such that f(x)=g(x) for all rational ,then f(x)=g(x) for all reals too"?

(a) identity theorem

(b) mean value theorem

(c) Cauchy theorem

(d) Bertrand theorem

Answer: (a)

148. Taylor's theorem is mainly used in expressing the function as a sum with _____ terms ?

(a) finite

(b) infinite

(c) partial

(d) complete

Answer: (b)

149. Find the expansion of $\cos(x^2)$?

(a) $1+x+x^2/2!+...$

(b) $1+x-x^2/2!+...$

(c) $1-x4/2!+x8/4!-...$

(d) $1+x4/2!+x8/4!+...$

Answer: (c)

150. If $f(x,y,z)= x^2+y^2+z^2-xyz+4$,then $f(x,y,z)$=_____?

(a) $-f(x,y,-z)$

(b) $f(z,y,x)$

(c) $f(-x,y,z)$

(d) 0

Answer: (b)

151. Find the limit of sin (y)/x ,where (x,y) approaches (0,0)?

(a) 0

(b) 1

(c) infinite

(d) doesn't exist

Answer: (d)

152. Find the maximum and minimum values of f(x)= sin(sin(x)) respectively ?

(a) sin(1) and sin(2)

(b) sin(1) and sin(-1)

(c) sin(2) and sin(1)

(d) sin(0) and sin(90)

Answer: (b)

153. Find the absolute maxima of $f(x)=5x^3+x^2-x+1$ on [-1,2]?

(a) at x=-1

(b) at x=2

(c) at x=1/5

(d) at x=1/3

Answer: (b)

154. Evaluate the triple integral of f(x,y,z)=xdxdydz where x,y,z varies from 0 to 1?

(a) (1/2)

(b) (1/3)

(c) (1/4)

(d) (1/5)

Answer: (a)

155. Pick the correct statement?

(a) Green's theorem is particular form of Stoke's theorem

(b) Stoke's theorem is particular form of Green's theorem

(c) Green's theorem and Stoke's theorem are same

(d) Green's theorem and Stoke's theorem are entirely different

Answer: (a)

156. Find the value of integral of f ; where $f(x,y)=(x^2y+xy)dx+(x^2+y^2)dy$ over the limits -1 to 1?

(a) 1

(b) 2

(c) 3

(d) 0

Answer: (d)

157. Let F=xi+yj+zk ,then find the integral of F around simple closed curve C over the boundary of surface S?

(a) 0

(b) 1

(c) 2

(d) 3

Answer: (a)

158. If $r=3t\hat{i}+4tj-7t^2k$, find the derivative dr/dt?

(a) 3i+4j+14tk

(b) 3i+4j-14tk

(c) 3i+2j-5k

(d) 3i+7j+78k

Answer: (b)

159. Determine the order of poles cosecz?

(a) z=0 is the simple pole

(b) z=0 is the irregular singularity

(c) no pole occurs at z=0

(d) a pole of order 3

Answer: (a)

160. If f and g are Riemann integrable on [a,b] , then which of the following property doesn't holds ?

(a) f^2 is R-integrable

(b) max{f,g} is R-integrable

(c) min{f,g} is R-integrable

(d) $|f|$ is not R-integrable

Answer: (d)

Discipline4

161. If f(x)=1/q for any rational number x and 0 otherwise , then find the lower integral?

(a) 0

(b) 1

(c) 2

(d) 6

Answer: (a)

162. Which of the following intervals are infinite?

(a) (a,b)

(b) [a,b]

(c) [a,b)

(d) [a,infinity)

Answer: (d)

163. Let D ⊆ R ; f:D to R , be sequence of bounded function and series f is Uniformly continuous to some function g ,then _____.

(a) g is bounded

(b) g is infinite

(c) g is finite

(d) g is unbounded

Answer: (a)

164. Find point wise limit of the series <x/(1+nx)>?

(a) 0

(b) 1

(c) 2

(d) 3

Answer: (a)

165. Consider the following series $<n^2x/(1+n^2x^2)>$, and check whether the series is uniformly convergent on [0,1]?

(a) it is uniformly continuous on (0,1)

(b) it is uniformly continuous on [0,1]

(c) it is not uniformly continuous on [0,1]

(d) none of the above options hold

Answer: (c)

166. Find the radius of convergence of series $1+x+x^2+x^3+\ldots$?

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

Answer: (b)

167. Find radius of convergence of $1+x+x^2/2!+\ldots$?

(a) 0
(b) 5
(c) 10
(d) infinite

Answer: (d)

168. For a metric d on a non empty set X, the metric space is represented as _____.

(a) (X,d)
(b) [X,d]
(c) (X,d]
(d) [X,d)

Answer: (a)

169. C[a,b] i.e. the set of all continuous function from a to b is a subset of real valued _____ function?

(a) bounded
(b) discontinuous
(c) finite
(d) infinite

Answer: (a)

170. Which of the following represent triangular inequality?

(a) $d(x,y)+d(y,z)\geq d(x,z)$
(b) $d(x,y)+d(y,z)=d(x,z)$
(c) $d(x,y)+d(y,z)<d(x,z)$
(d) $d(x,y)+d(y,z)+d(x,z)>0$

Answer: (a)

171. A topological space is _____ if every point x of X has neighbourhood base consisting of compact neighbourhoods?

(a) compact
(b) locally compact
(c) connected
(d) finite metric

Answer: (b)

172. $\{x \in :(, y) \leq r\}$ defined in metric space is known as _____ ball.

(a) open

(b) closed

(c) semi-open

(d) semi-closed

Answer: (b)

173. The usual topological space induced by usual metric is denoted by which of the following?

(a) $d(x,y)=|x-y|$

(b) $d(x,y)=|x+y|$

(c) $d(x,y)>0$

(d) $d(x,y)<0$

Answer: (a)

174. Which property states that ," $A \subseteq X$ be any subset and every finite sub-collection of A has non empty intersection?

(a) Finite intersection property

(b) Cantor property

(c) weierstrass property

(d) heins berg property

Answer: (a)

175. The set $S=\{(0, y) : -1 \leq y \leq 1\} \cup \{(x,\sin(1/x)) : x >$ is _____.

(a) connected

(b) $\leq$

(c) closed

(d) infinite

Answer: (a)

176. An automorphism is defined if it is _____.

(a) isomorphism,one one ,onto

(b) isomorphism but not one one and onto

(c) one one ,onto

(d) isomorphism only

Answer: (a)

177. Let G be a multiplicative group defined by $T(x)=x^2$; then T satisfies which of the following property?

(a) Homomorphism

(b) isomorphism

(c) automorphism

(d) all of the three options

Answer: (d)

178. If U(8)={1,3,5,7} and U(10)={1,3,7,9} ,then find how many element are there in U(8)×U(10)?

(a) 4

(b) 8

(c) 16

(d) 32

Answer: (c)

179. The external direct product of two abelian group is abelian if and only if both are _____?

(a) finite

(b) abelian

(c) non abelian

(d) infinite

Answer: (b)

180. Find the cardinality of generating set for dihedral group?

(a) 1

(b) 2

(c) 3

(d) 4

Answer: (b)

Discipline5

181. If a set G with binary operation * satisfies closu property as well as associative property then it is called _____.

(a) monoid

(b) quasiod

(c) semigroup

(d) group

Answer: (c)

182. Find the number of subgroups of cyclic group of order 50?

(a) 2

(b) 4

(c) 6

(d) 8

Answer: (c)

183. If f(z) =u+iv is an analytic function,in domain D ,then the curves u=constant,v=constant form two _____ families?

(a) orthogonal

(b) symmetric

(c) diagnol

(d) parametric

Answer: (a)

184. Check about continuity and analyticity of f(z)=cos(z)?

(a) continuous but not analytic

(b) continuous and analytic everywhere

(c) analytic but not continuous

(d) neither continuous nor analytic

Answer: (b)

185. If the contour is closed and does not intersect itself ,then it is called _____ curve.

(a) open

(b) jordan

(c) binary

(d) ternary

Answer: (b)

186. If a function f(z) is continuous on a contour C of length l and if M is the upper bound of f(z) on C ,then ∫f(z)dz≤ _____?

(a) M

(b) Ml

(c) L

(d) M/l

Answer: (b)

187. Let f(z) be single valued analytic function in a si e connected domain D, if a,b are in D ,then(∫ f(z)dz)over the limits a and b =_____, where F s and indefinite integral of f(z)?

(a) F(a)

(b) F(b)

(c) F(a)-F(b)

(d) F(b)-F(a)

Answer: (d)

188. Which theorem states that," if an entire function is bounded for a values of z,then it is constant"?

(a) Lioville's theorem

(b) morera theorem

(c) Fundamental theorem

(d) Cauchy theorem

Answer: (a)

189. Evaluate ∫zdz over C(ab initio)?

(a) b+a-2

(b) $(b^2+a^2)/2$

(c) $(b^2-a^2)/2$

(d) b^2+a^2

Answer: (c)

190. Find the residue $f(z)=z+1/z+1/z^3+...$ at z=infinity?

(a) 0

(b) 1

(c) -1

(d) 2

Answer: (c)

Teaching Methodology

191. Which learning focuses on learners reflecting on their experience of doing something, so as to gain conceptual insight as well as practical expertise?

(a) Practical learning

(b) Focused learning

(c) Experiential learning

(d) Theoretical learning

Answer: (c)

192. Talking and indiscipline in the classroom is an indication of _____.

(a) Mischievous behaviour

(b) Mannerless

(c) not a good student

(d) Boredom caused by repetitiveness

Answer: (d)

193. What refers to the set of rules and pri[illegible]. govern the structuring of a sentence or a phrase in a language?

(a) Vocabulary

(b) Syntax

(c) Language function

(d) Discourse

Answer: (b)

194. Which of this is not a auxiliary discipline of Hinduism ?

(a) Shiksha

(b) Vyakrana

(c) Jyotisha

(d) Nakshatra

Answer: (d)

195. A study from which year showed that, men and women differ in their types of interdependence?

(a) 1997

(b) 1897

(c) 1999

(d) 1980

Answer: (c)

197. Communicative Lessons are not _____.

(a) Contextualised

(b) Learner-Centred

(c) Authentic

(d) Grammatical

Answer: (d)

198. What is simulation based training?

(a) Is additional services available online for those who wish to receive training above and beyond that which is offered by their employers

(b) Is another method which uses technology to assist in trainee development.

(c) Is method which include how to use a variety of weapons, outdoor survival skills.

(d) Is the purification of the mind, heart, understanding and actions to obtain a variety of spiritual goals.

Answer: (b)

199. Which is the main process that takes place in assessment for learning?

(a) The teacher provides feedback to each student about how to improve their learning

(b) Questioning students what level they are at.

(c) Students depending on teachers to assess and evaluate them.

(d) Formative assessment

Answer: (a)

200. The individual who has unique traits and chara ristics is called _____.

(a) Odd individual

(b) Exceptional individual

(c) Special individual

(d) Disabled individual

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

General Awareness

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

Arithmetic Ability

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

General English

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

Discipline1

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

Discipline2

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

Discipline3

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

Discipline4

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

Discipline5

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

Teaching Methodology

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