PREVIOUS YEAR PAPER

DSSSB TGT Maths (Female) 2021 — 13 September 2021, Shift 1

DSSSB TGT · 13 September 2021 · Shift 1

156 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: 44 (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 13 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-female-13-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.
M24 : F17 :: P36 : ?

(a) J29
(b) I29
(c) H29
(d) I28

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) PQR
(b) NRD
(c) OJK
(d) NMI

Answer: (a)

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) 123 - 231
(b) 352 - 523
(c) 461 - 614
(d) 478 - 874

Answer: (d)

4. Complete the following letter series:
LMA, OOZ, RQY, USX, ___

(a) XUW

(b) XTW

(c) YUW

(d) YTW

Answer: (a)

5. Find the wrong term in the given series.
BM, EO, HQ, KT, NU

(a) EO

(b) HQ

(c) KT

(d) NU

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:
$Q \leq R < S < T \leq W \leq Y$
Conclusions:
I. $T = Y$
II. $Y > T$

(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. A, B, C and D are four friends. B is richer than A and C, but C is smarter than him. D is not as smart as C, while A is the least smart. C is not as rich as A. D is richer than B but not smarter than him. Who is the richest?

(a) A

(b) B

(c) C

(d) D

Answer: (d)

8. Following are the conditions for admitting students for a Programme in Management.
The applicant must –
(i) not be less than twenty one years as on 1.7.2021.
(ii) be a graduate in any discipline with at least 70% marks.
(iii) have passed the written test and interview with at least 70% marks.
(iv) have work experience of at least 6 months after completing graduation.
In the case of an applicant who fulfils all other conditions except:
(a) at (ii) above, but has a degree in commerce , his/her case is to be referred to Director.
(b) at (iii) above, but has work experience of more than 2 years, his/her case is to be referred to HOD.
Rajesh has been working for 3 years after completing graduation. He has a degree in commerce. He was born on 1-11-1998. He has secured 75% marks in the written test & interview and 65% marks in graduation.

(a) The Candidate is selected.

(b) The Candidate is not selected.

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

(d) The candidate is to be referred to HOD.

Answer: (c)

9. For a job, a candidate must fulfil the following criteria:
I. The age should be from 23 to 27 as on 1st July 2021.
II. Must have secured at least 70% marks in graduation.
III. Must have done post-graduation with at least 65% marks.
IV. Must have an experience of at least 2 years.
V. Must have secured at least 70% in written test and 75% in interview.
In the case of candidate who fulfils all conditions except –
(a) At (II) above, but is a post graduate with at least 65% marks, his case to be referred to Manager.
(b) at (IV) above, but has secured at least 80% marks in interview and at least 80% marks in written test, his case to be referred to Assistant.
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.
Aman was born on 20 May 1995. He secured 75% marks in graduation. He secured 70% marks in post graduation. He also secured 75% marks in both written test and interview. He has an experience of 3 years.

(a) He will be selected.

(b) He will not be selected.

(c) He will be referred to manager.

(d) He will be referred to Assistant.

Answer: (a)

10. Find the missing number in the given series:
32, 33, 25, 52, -12, _

(a) 112

(b) 111

(c) 109

(d) 113

Answer: (d)

11. The following questions is based on the five three-digit numbers given below.
287 395 678 453 145
If in each number three digits are arranged in descending order, which of the following will be the lowest?

(a) 287
(b) 395
(c) 678
(d) 145

Answer: (d)

12. If each of the even digits in the number 7867469 is increased by '1' and each of the odd digits is decreased by '2', then which of the followings will be the sum of the digits of the number?

(a) 42
(b) 44
(c) 45
(d) 36

Answer: (c)

13. Anita and Babita are the sisters. Mukesh and Nikita are couple. Nikita is the brother of Pradeep who is the son of Anita. Omkar is the daughter of Nikita. How is Anita related to Omkar?

(a) Paternal Grandfather
(b) Paternal Grandmother
(c) Mother
(d) Sister

Answer: (b)

14. In a class, 5 boys are sitting in a row facing North. Dinesh is to the left of Anil and to the right of Chunky. Emily is sitting to the right of Bhuvan but to the left of Chunky. Who is sitting in the middle?

(a) Chunky
(b) Emily
(c) Dinesh
(d) Anil

Answer: (a)

15. Speed of boat in still water is 24 kmph & speed of current is 4 kmph. The boat completes round trip from A to B in 6 hrs. Find the distance between A and B.

(a) 70 km
(b) 30 km
(c) 90 km
(d) 120 km

Answer: (a)

General Awareness

21. On which day the World Asthma Day is observed every year?
    (a) On the third Tuesday of May every year
    (b) On the Second Tuesday of May every year
    (c) On the first Tuesday of May every year
    (d) On the last Tuesday of May every year

    Answer: (c)

22. Recently, which new scheme was launched by the Supreme Court?
    (a) FORMER
    (b) FASTER
    (c) HIGHER
    (d) HUMAN

    Answer: (b)

23. Ashoka the Great had promoted the spread of _____.
    (a) Jainism
    (b) Hinduism
    (c) Judaism
    (d) Buddhism

    Answer: (d)

24. What does the symbol of the Horse signify in con . with Buddha's life?
    (a) Death (Parinirvana)
    (b) Enlightment (Nirvana)
    (c) First Sermon (Dhammachakrapariva.
    (d) The Great Departure (Mahabhinishkraman

    Answer: (d)

25. How many Veto Powers does the President of India have?
    (a) Three
    (b) Five
    (c) Two
    (d) One

    Answer: (a)

26. On which date the Indian Constitution was adopted by the Government of India?
    (a) 26th January 1950
    (b) 15th August 1947
    (c) 26th November 1949
    (d) 1st March 1950

    Answer: (c)

27. In the Indian women's cricket team who won the Arjuna Award in 2020?
    (a) Deepti Sharma
    (b) Deepa Sharma
    (c) Deepali Sharma
    (d) Devika Sharma

    Answer: (a)

28. Which Basic Volleyball Rule for Playing the Game is correct from the following options?
    (a) 6 players on a team, 1 on the front row and 5 on the back row.
    (b) 6 players on a team, 4 on the front row and 2 on the back row.
    (c) 6 players on a team, 2 on the front row and 4 on the back row.
    (d) 6 players on a team, 3 on the front row and 3 on the back row.

    Answer: (d)

29. The Kandariya Mahadeva Temple is situated in which state?
    (a) Madhya Pradesh
    (b) Gujrat
    (c) Uttar Pradesh
    (d) Kerala

    Answer: (a)

30. Dhrupad is a genre in Hindustani classical music, [illegible]at is the meaning of Dhrupad?
    (a) The word Dhrupad is derived from Dhruva, th[illegible]teadfast evening star that moves through the galaxy, and Pada meaning voice.
    (b) The word Dhrupad is derived from [illegible] steadfast evening star that moves through the galaxy, and Pada meaning poetry.
    (c) The word Dhrupad is derived from Dhruva, the steadfast morning star that moves through the galaxy, and Pada meaning poetry.
    (d) The word Dhrupad is derived from Dhruva, the steadfast evening star that moves through the galaxy, and Pada meaning bird.

    Answer: (b)

31. Rohtang Pass connects _____.
    (a) The Kullu Valley with the Lahaul and Spiti Valleys of Madhya Pradesh, India.
    (b) The Kullu Manali with the Lahaul and Spiti Valleys of Himachal Pradesh, India.
    (c) The Kullu Valley with the Lahaul and Spiti Valleys of Kashmir, India.
    (d) The Kullu Valley with the Lahaul and Spiti Valleys of Himachal Pradesh, India.

    Answer: (d)

32. Jammu Kashmir is famous for its special garden, which garden is this from following options?
    (a) Indira Gandhi Memorial Lotus Garden
    (b) Indira Gandhi Memorial Tulip Garden
    (c) Indira Gandhi Memorial Rose Garden
    (d) Indira Gandhi Memorial Lily Garden

    Answer: (b)

33. Currently (As on August 2021), Who is the Union Finance Minister?

(a) Pranab Kumar Mukherjee

(b) Nirmala Sitharaman

(c) Arun Jaitley

(d) Piyush Goyal

Answer: (b)

34. One revolution of the earth around the sun takes approximately _____.

(a) 365 days and 6 hours or one year

(b) 366 days and 6 hours or one year

(c) 265 days and 6 hours

(d) 367 days and 6 hours or one year

Answer: (a)

35. IQ stands for _____ and, it is a measure of a person's reasoning ability.

(a) Interesting Quotient

(b) Intelligence Quality

(c) Intelligence Quotient

(d) Intelligence Question

Answer: (c)

36. Selman Waksman discovered streptomycin from t bacterium, which proved an effective medicine against:

(a) Ebola virus

(b) Asthma

(c) HIV

(d) Tuberculosis

Answer: (d)

37. PARAM Siddhi-AI and Mihir are two Supercomputers from which country?

(a) India

(b) Pakistan

(c) Afghanistan

(d) Bangladesh

Answer: (a)

38. Total how many countries are the members of The South Asian Association for Regional Cooperation (SAARC)?

(a) Eight

(b) Ten

(c) Seven

(d) Six

Answer: (a)

39. The only foreigner to receive Padma Vibhushan in 2021 is _____.
    (a) Shinzo Abe
    (b) George Fernandes
    (c) Jigme Dorji Wangchuck
    (d) Syed Muazzem Ali
    Answer: (a)

40. Who is the author of the book "Stories I Must Tell"?
    (a) Nani Palkhivala
    (b) Pooja Bedi
    (c) Kabir Bedi
    (d) John Keats
    Answer: (c)

Arithmetic Ability

41. If a/b=11/13 then what is the value of $(a^3-b^3)/(a^3+b^3)$
    (a) -0.2
    (b) -0.25
    (c) -0.24
    (d) -0.26
    Answer: (b)

42. What fraction is 8 seconds of 3 hours?
    (a) 1/1530
    (b) 1/1500
    (c) 1/1350
    (d) 1/13500
    Answer: (c)

43. A board i.e. 8 feet and 9 inches tallis divided into 3 equal parts. What is the length of each part?
    (a) 53
    (b) 55
    (c) 33
    (d) 35
    Answer: (d)

44. When a number is divided by 18, 28, 38 then it leaves a remainder of 13 in each case. Find such smallest number.
    (a) 4800
    (b) 4802
    (c) 4803
    (d) 4801
    Answer: (d)

45. Find the largest number that divided 45, 57 and 65 leaves a common remainder. What is the remainder?

(a) 4, 3

(b) 4, 1

(c) 4, 0

(d) 1, 4

Answer: (b)

46. A square and a equilateral triangle have the same length of sides. The side is 16 cm. What is the ratio of the area of the square to the triangle?

(a) √3:4

(b) 1:1

(c) 4:√3

(d) 4:2

Answer: (c)

47. The ratio of present ages of Salman and Amar is 8:9. After 15 years the ratio of their ages become 13:14. What is their present ages?

(a) 8, 9

(b) 24, 27

(c) 16, 18

(d) 32, 36

Answer: (b)

48. The price of a commodity has decreas[illegible]by 1[illegible] and then it has increased by 22%. What is the new cost as a percentage of the original cost.

(a) 102.0%

(b) 103.0%

(c) 102.48%

(d) 104.0%

Answer: (c)

49. The value of a machine depreciates at a rate of 13% p.a. If the present value is Rs. 5670000, what will be it's worth after 2 years?

(a) Rs. 4291632

(b) Rs. 4291623

(c) Rs. 4291326

(d) Rs. 4291236

Answer: (b)

50. The average weight of 20 crew members increase by 2.3 kg if a man of 43 kg is replaced with a new man. What is the weight of the new man?

(a) 98 kg
(b) 79 kg
(c) 89 kg
(d) 78 kg

Answer: (c)

51. There are 42 students in a hostel. 14 more students joined and the expenditure has been increased by Rs. 14 a day. The average expenditure has decreased by Rs 2 per day. What was the original expenditure?

(a) Rs. 387
(b) Rs. 378
(c) Rs. 783
(d) Rs. 738

Answer: (b)

52. Which is the better offer:
i. Three successive discounts of 25%, 16%, 30% ii. Three successive discounts of 28%, 26%, 8% iii. Three successive discounts of 18%, 56%, 3% iv. Three successive discounts of 2%, 44%, 15%

(a) i
(b) ii
(c) iii
(d) iv

Answer: (c)

53. An article is listed at Rs. 80000 with a discount of 12%. What additional discount must be offered to the customer to bring the price to Rs.
64768?

(a) 8%
(b) 10%
(c) 12%
(d) 6%

Answer: (a)

54. A shopkeeper gives 28% discount on the list price of Rs. 56700. He made a loss of 10% after this transaction. What is the profit percentage that he should keep to make a profit of Rs. 1700?

(a) 3.75%
(b) 3.7%
(c) 3.5%
(d) 3.57%

Answer: (a)

55. Divide the amount 60000 between A and B such that the amount after 2 years is same as the amount after 3 years at interest 6% p.a compound interest.

(a) Rs. 30873.8, Rs. 29126.2

(b) Rs. 30837.8, Rs. 29261.2

(c) Rs. 30783.8, Rs. 29261.2

(d) Rs. 30738.8, Rs. 29261.2

Answer: (a)

56. Water flows into a tank that is 175m in length and 100m in width. The pipe is cylindrical and water flows through it at a speed of 12 km per hour.
The radius of the pipe is 0.7m. How long will it take to fill the tank by 5m?

(a) 248 mins

(b) 284 mins

(c) 428 mins

(d) 824 mins

Answer: (b)

57. Ram and Shyam can do a job in 25 days together. If Ram alone takes 30 days to do the job then how long does Shyam take?

(a) 125 days

(b) 150 days

(c) 105 days

(d) 115 days

Answer: (b)

58. A man walks up to the station at a speed of [illegible]kmph. However, he misses the train by 3 minutes. If he walks at 6kmph he reaches 4 mins early to the station. What is the distance that the man covers?

(a) 7 km

(b) 2 km

(c) 3 km

(d) 3.5 km

Answer: (d)

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'.
Therefore, when I get mad at somebody, I / express anger, but I also make it a point / of not punch them in the face.

(a) Therefore, when I get mad at somebody, I

(b) express anger, but I also make it a point

(c) of not punch them in the face.

(d) No Error

Answer: (c)

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'.
At the turning of the last century / a new element began to make / its appearance in our world.

(a) At the turning of the last century

(b) a new element began to make

(c) its appearance in our world.

(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.
Looking out the windows, (passengers can see ground, only after thinning and thickening) globs of grey clouds and the spatter of rain on the windows.

(a) passengers can see the ground, since the thinning and thickening globs

(b) passengers can't see the ground, only the thinning and thickening globs

(c) passengers can't see the ground, after all only the thinning and thickening globs

(d) No correction required.

Answer: (b)

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.
No, the point is to first get (self-discipline people wh ngage) in very rigorous thinking.

(a) self-disciplined people who engage

(b) self-discipline people who engaged

(c) self-disciplined people who are engage

(d) No correction required.

Answer: (a)

65. Fill in the blank with the most appropriate choice.
As if this period of disgraceful _____ had the slightest capacity to produce anything of superior quality.

(a) putrescence

(b) decadence

(c) scribbage

(d) abbreviator

Answer: (b)

66. The sentences below are not complete. There are four options for each question. Choose the best word to complete the sentence.
All require _____ deeper problems rather than avoiding them through highs.

(a) confront
(b) confronted
(c) confrontational
(d) confronting

Answer: (d)

67. Choose the gramatically correct sentence from the given options.

(a) A woman is more sensitive than an man.
(b) A woman is more sensitive than a man.
(c) A woman is more sensitive then men.
(d) A woman is many sensitive then men.

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.
Goondas Act is a type of preventive detention law that was first enacted in 1923 in Bengal.
P. The law is used in several forms in several states for 'preventive detention of habitual offenders.'
Q. Goondas Act in Tamil Nadu is known as the Tamil Nadu Prevention of Dangerous Activities of Bootleggers, Drug Offenders etc.
R. This enables the authorities to imprison persons w ut having to provide for a court trial.
S. Historically, these acts were criticised for its use i etaining people who showed political dissent.
Even a single offence under the act enables the au ities to detain a person as a goonda.

(a) QSRP
(b) PQRS
(c) RPQS
(d) PRSQ

Answer: (d)

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

(a) RECIEPE
(b) RECIPE
(c) RECEPIE
(d) RECIEPIE

Answer: (b)

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

(a) DISLOYAL
(b) COMPLIMENTARY
(c) DEFAMATORY
(d) DEVOTED

Answer: (c)

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

(a) HOMOGENOUS

(b) UNVARIED

(c) CONSTANT

(d) COMBINE

Answer: (d)

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

(a) MONOPOLY

(b) CARTEL

(c) ACCEPT

(d) OWNERSHIP

Answer: (c)

73. Select the most appropriate 'one word ' for the expressions given below.
Relating to the enjoyment or study of beauty

(a) Anile

(b) Avarice

(c) Aesthetic

(d) Menagerie

Answer: (c)

74. Select the most appropriate idiom for th[illegible]ntence.
To work or operate in a satisfactory manner.

(a) Cut the mustard

(b) Takes the biscuit

(c) Hot potato

(d) Topsy Turvy

Answer: (a)

75. Select the most appropriate meaning of the given proverb.
All roads lead to Rome.

(a) Life is what you make of it.

(b) The positive outcome of something makes the earlier negative things unimportant.

(c) There are several ways to complete a task.

(d) When the food is nicely arranged, the appetite increases.

Answer: (c)

79. Enzo Ferrari was not initially interested in:

(a) Idea of producing road cars

(b) Idea of producing road trucks

(c) Idea of establishing a factory

(d) Idea of participating in a race

Answer: (a)

Discipline1

101. The derivative of a function is

(a) order

(b) range

(c) rate of change

(d) slope

Answer: (c)

102. If u = x^2 then the derivative of x4 is :

(a) 4u (du÷dx)

(b) 2u (du÷dx)

(c) 3u (du÷dx)

(d) u (du÷dx)

Answer: (b)

103. If (u= 1÷x)Then the derivative of 1÷x^2 is :

(a) 2÷ x^3

(b) 1÷ x^3

(c) (-1)÷ x^3

(d) (-2)÷ x^3

Answer: (d)

104. Find out the whether the statement is true or false in case of monotony : f'(x) > 0 $\Rightarrow$ f (x) increasing.
f'(x) < 0 $\Rightarrow$ f (x) decreasing

(a) Statement 1 is true , Statement 2 is false

(b) Statement 2 is true, Statement 1 is false

(c) Both statements are true

(d) Both statements are false

Answer: (c)

105. Calculate the number of asymptotes from this function of f (x) = (x ÷ (x^2 – 9)).

(a) 0

(b) 1

(c) 2

(d) 3

Answer: (d)

106. What is volume of a cone of height H and radius R ?

(a) (1÷3)πR^2H

(b) (1÷2)πR^2H

(c) (1÷3)πR^3H

(d) (1÷2)πR^3H

Answer: (a)

107. The area of the region trapped between the curves $y = x^2$ and y = x+2 is :

(a) 10÷3

(b) 9÷2

(c) 2÷3

(d) 10÷6

Answer: (b)

108. The spin field or rotation field or turning field gc around the origin instead of away from it. The field is S. If S is perpendicular to R then their d roduct is :

(a) 0

(b) 1

(c) infinite

(d) not defined

Answer: (a)

109. Which statement does not satisfied the condition for the radial fields and spin fields :

(a) The radial fields R and R÷r and R÷r^2 are all gradient fields.

(b) The spin fields S and S÷r are not gradients of any f(x, y).

(c) The spin field S÷r^2 is the gradient of the polar angle θ = $\tan^{-1}$(y÷x).

(d) The radial field having multiple of R = - yi + xj

Answer: (d)

110. The area of an ellipse is __ when the semiaxes have lengths a and b.

(a) 1÷(2πab)

(b) (1÷2π)ab

(c) πab

(d) 2πab

Answer: (c)

111. Zero of x^2-64 will be :

(a) ±2

(b) ±64

(c) ±8

(d) ±4

Answer: (c)

112. This polynomial $x^2+8x+16$ has :

(a) one positive and two imaginary zeros

(b) two -ve zeros

(c) three real zeros

(d) no zero

Answer: (b)

113. Find out the number of equivalence classes that can be defined by the set {4,5,6} :

(a) 4

(b) 5

(c) 6

(d) 15

Answer: (b)

114. Which one is not true for equivalence relation :

(a) Relation R is Reflexive, i.e. aRa $\forall$ a $\in$ A.

(b) Relation R is Symmetric, i.e., aRb $\Longrightarrow$ bRa

(c) Relation R is transitive, i.e., aRb and [illegible] Rc.

(d) Relation is transpose i.e., R^{-1}= {(b, a): (a, b) $\in$ R}

Answer: (d)

115. Two triangles consisting of 1 + 2 + · · · + n pebbles and fit them together with one additional diagonal of n + 1 pebbles. The Sum of the First n Integers :

(a) $\sqrt{(n)^3}$

(b) $(n+1)^2$

(c) n^2

(d) $\sqrt{(n+1)}$

Answer: (b)

116. gcd (12,20) =

(a) 12

(b) 20

(c) 4

(d) 3

Answer: (c)

118. Which one is not the possible row operations on a matrix :

(a) Interchange any two rows

(b) Add two rows together.

(c) Multiply one row by a non-zero constant.

(d) Turn the numbers in the bottom row into positive

Answer: (d)

119. Which one is true when A matrix is in row echelon form :
a)The first non-zero number from the left (the "leading coefficient") is always to the right of the first non-zero number in the row above. b)Rows are not attached to all zeros are at the bottom of the matrix.

(a) a

(b) b

(c) Both statements are true

(d) any a or b

Answer: (a)

120. Find the row echelon form of :
[10 20
30 40]

(a) [1 2 30 40]

(b) [1 2 0 -20]

(c) [1 2 0 1]

(d) [1 2 0 -10]

Answer: (c)

Discipline2

123. Which is not the properties of Absolute Value :

(a) $|a| \geq 0$

(b) $|-a| = a$

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

(d) $|a \cdot b| = |a| \cdot |b|$

Answer: (b)

124. Simplify : $(3x) \div ((5x+1)-2)$

(a) $(3x-2x) \div (x+1)$

(b) $(3x(x+1)) \div (5-2(x+1))$

(c) $(3x) \div (5x-1)$

(d) $(3x(3-2x)) \div (x+1)$

Answer: (c)

127. A convergent sequence is

(a) integral

(b) bounded

(c) Unique

(d) conditional

Answer: (b)

128. A divergent infinite series that does not diverge to $\pm\infty$ is said to be

(a) linear

(b) non linear

(c) oscillatory

(d) arbitrary

Answer: (c)

129. The sum of a convergent series is ?

(a) integral

(b) bounded

(c) Unique

(d) conditional

Answer: (c)

131. What will be the order and degree of the differen' equation :$4x(d^3y \div dx^3)+6x^2(dy \div dx)^3-9xy=0$

(a) Third order, first degree

(b) First order, fourth degree

(c) First order, third degree

(d) Third order, Third degree

Answer: (a)

132. If the difference equation P(n+1) = aP(n)+ b then, if P(0) = 2, a = 3, and b = −1, what is P(2)?

(a) 5

(b) -5

(c) 14

(d) 15

Answer: (c)

134. When the growth rate was 1 % per year , the world population in 1965 was 4 billion. If the modelled equation is given by $P= 4(2.1)^t$. Population growth in Sweden in from July 1965 to July 1966 was approx. _____ .

(a) 1340000000

(b) 1440000000

(c) 1540000000

(d) 1640000000

Answer: (d)

135. Which one is the Malthus equation?

(a) dN ÷ dt = rN

(b) dN÷ dt= (b – d)N

(c) dN ÷ dt = log (A+bt)

(d) dN ÷ dt = N× e^(0.00000111 t)

Answer: (b)

136. What is the order of this equation? $(d^2y÷dx^2) - (dy÷dx)^3 + 3x = 0$

(a) 0

(b) 1

(c) 2

(d) 3

Answer: (c)

137. The ordinary differential equation is :
$(d^2y÷dx^2) -4x^2y +\cos x =0$

(a) Linear and homogeneous

(b) Linear and Non homogeneous

(c) Non Linear and homogeneous

(d) Non Linear and Non homogeneous

Answer: (b)

138. Which one may or may not take form of model ?

(a) statistical models

(b) differential equations

(c) game of theoretic models

(d) logical models

Answer: (d)

139. The relationship between logistic growth and population data ?

(a) (1÷y)×(dy÷dt)= ry(a – y)

(b) dy ÷ dt = ry(a – y)

(c) (1÷y)×(dy÷dt)=(d÷dt)×(log y)

(d) (1÷y)×(dy÷dt)= ry(a (y)

Answer: (b)

Discipline3

141. Solve : $\lim x\to 0 \log (e^x)$

(a) 0

(b) 1

(c) -1

(d) e

Answer: (a)

142. Solve : lim $x \to -2$ $(2x^3 + 4x^2 + 8x + 10)$

(a) -6

(b) 58

(c) 0

(d) infinity

Answer: (a)

143. Which one is not related to limit of function?

(a) The Constant Function Rule

(b) The Constant Multiple Rule

(c) The Power Rule

(d) The addition rule

Answer: (d)

144. This function is : $f(x) = (x^2 - 2x + 2) \div (x4 + 1)$

(a) continuous

(b) discontinuous

(c) linear

(d) Non Linear

Answer: (a)

146. Which one is not the method to recognise whether this function is discontinuous or not?

(a) Show that the function fails the sequence definition.

(b) Prove by contradiction by relating it to a function known to be discontinuous.

(c) Show that the function fails the ε− δ [illegible].

(d) Decomposing a function into simple discontinuous functions.

Answer: (d)

147. Which composition of elementary function is not considered as derivable ?

(a) polynomial

(b) exponential

(c) injective

(d) trigonometric

Answer: (c)

149. Which is not the way to write Taylor expansion :

(a) quadratic

(b) cubic

(c) constant

(d) onto

Answer: (d)

150. Taylor expansion of e^x :

(a) $1+x+((1\div3)(x^2))+((1\div6)(x^3))+\cdots$

(b) $1+x+((1\div6)(x^2))+((1\div2)(x^3))+\cdots$

(c) $1+x+((1\div2)(x^2))+((1\div2)(x^3))+\cdots$

(d) $1+x+((1\div2)(x^2))+((1\div6)(x^3))+\cdots$

Answer: (d)

151. In $\sin(h) = h + O(h^3)$; what is the value of $O(h^3)$?

(a) $(1\div3!)\times h^3$

(b) $(-1\div3!)\times h^3$

(c) $(1\div2!)\times h^3$

(d) $-(1\div2!)\times h^3$

Answer: (b)

152. Determine the domain of the following function, $f(x,y,z)= 1/\sqrt{(x^2+y^2+z^2-16)}$

(a) $X^2+y^2+z^2>16$

(b) $X^2+y^2+z^2>-16$

(c) $X^2+y^2+z^2<16$

(d) All R

Answer: (a)

153. The function $f(x)= x^{-x}$ $(x \in R)$attains maximum at ?

(a) 1

(b) -1

(c) 0

(d) 1/e

Answer: (d)

154. The maximum always occurs at a:

(a) Stationary point

(b) rough point

(c) end point

(d) critical point

Answer: (d)

155. Find the volume $\int\int\int dx\,dy\,dz$ inside the unit sphere $x^2+ y^2 + z^2 = 1$.

(a) 2π

(b) 4π

(c) $4\pi\div3$

(d) $2\pi\div3$

Answer: (c)

157. Green's theorem is ___

(a) a line integral around a simple closed curve C to a double integral over the plane region line D bounded by C.

(b) 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.

(c) a line integral around a simple closed curve C to a double integral over the dimensional region D bounded by C.

(d) a double integral around a simple closed curve C to a line integral over the dimensional region D bounded by C

Answer: (a)

158. The total flux $\int$ F. n ds through every closed curve is

(a) π÷2

(b) 0

(c) ∞

(d) π

Answer: (b)

159. Which operator is used in stokes theorem

(a) curl

(b) logical

(c) open

(d) set

Answer: (a)

160. What is the difference between stokes and [illegible]n theorem

(a) Green's theorem states this for objects of dimension 2 living in a space of dimension 2, and Stokes' theorem states this for objects of dimension 2 living in a space of dimension 3.

(b) Green's theorem states this for objects of dimension 3 living in a space of dimension 2, and Stokes' theorem states this for objects of dimension 2 living in a space of dimension 3.

(c) Green's theorem states this for objects of dimension 2 living in a space of dimension 2, and Stokes' theorem states this for objects of dimension 3 living in a space of dimension 2.

(d) Green's theorem states this for space of dimension 2 living in a objects of dimension 2, and Stokes' theorem states this for objects of dimension 2 living in a space of dimension 3.

Answer: (a)

Discipline4

161. Which function is not the Riemann integrable?

(a) bounded

(b) unbounded

(c) continuous

(d) discontinuous

Answer: (b)

162. Suppose that f : [a, b] → R is bounded, P is a partitions of [a, b], and Q is refinement of P. Then which one is true :
Statement 1: U(f; Q) ≤ U(f; P)
Statement 2: L(f; P) ≤ L(f; Q)

(a) 1
(b) 2
(c) both statements are true
(d) Both statements are false

Answer: (c)

163. If f : [a, b] → R is bounded and P, Q are partitions of [a, b], then :

(a) L(f) ≤ U(f)
(b) L(f; P) ≤ L(f; Q)
(c) U(f; Q) ≤ U(f; P)
(d) L(f; P) ≤ U(f; Q)

Answer: (d)

164. Solve : lim ε→0+ ∫ (1÷ (2√x)) dx ; with 0 < ε < 1

(a) 1
(b) 0
(c) 1÷√4
(d) 1÷√2

Answer: (a)

166. If {Fn} converges uniformly to F on S; ∴ {Fn} converges ____to F on S.

(a) point wise
(b) closed subset
(c) constant
(d) integer

Answer: (a)

167. The function fj (x) = x^j ; j ≥ 0; define the infinite series. The nth partial sum of the series is :

(a) Fj(x) = 1- x + x^2+.....+x^j
(b) Fn(x) = 1+ x + x^2+.....+xn
(c) Fn(x) = x+ x^2 + x^2+.....+xn
(d) Fj(x) = x- +x^2+.....+x^j

Answer: (b)

168. lim x→∞ (ln x ÷x) ?

(a) 0 diverges
(b) ∞ converges
(c) 0 converges
(d) ∞ diverges

Answer: (c)

169. The series $\Sigma((x - 5)n) \div n^2)$ has radius r = 1 around its basepoint a = 5. What is the interval of convergence?

(a) 0< x < 1

(b) 4< x < 6

(c) 0< x < 2

(d) 0< x < n

Answer: (b)

170. The convergence of the series $\Sigma(xn \div n)$ is

(a) 1

(b) 0

(c) -1

(d) ε

Answer: (a)

171. A set is ___ if and only if it contains all its limit points:

(a) open

(b) closed

(c) joint

(d) disjoint

Answer: (b)

172. The intersection of finitely many open sets is __ d union of finitely many closed sets is ____

(a) Open, closed

(b) Open, open

(c) closed, closed

(d) closed, open

Answer: (a)

173. Topological space is _____-- a metric space

(a) Always

(b) Sometimes

(c) never

(d) vice-versa

Answer: (b)

174. which one of the following has topological property

(a) Near compactness

(b) Path connectedness

(c) Path compactness

(d) Near connectedness

Answer: (b)

175. Every Cauchy sequence in a metric space is ___ and not a _____

(a) Topological ,convergent
(b) Homoeomorphic ,convergent
(c) Convergent, topological
(d) Topological , homoeomorphic

Answer: (c)

176. If all convergent sequences are mapped to convergent sequences then the function is ____

(a) Discontinuous
(b) continuous
(c) not defined
(d) differentiated

Answer: (b)

177. Every metric space is :

(a) Normed space
(b) Topological
(c) continuous
(d) Congruent

Answer: (b)

178. If p and π are equivalent metrics on a set A; then p) and (A, π) have the __ and ____ sets

(a) Open ,different
(b) Closed, same
(c) Same ,open
(d) Different, closed

Answer: (c)

179. A set T is compact if it has the ____ property

(a) Heine -corel
(b) Jaein -borel
(c) Uniqued
(d) Heine -borel

Answer: (d)

180. If T is compact ,then T is ___ and ___

(a) Bounded and open
(b) Closed and unbounded
(c) Unbounded and open
(d) Closed and bounded

Answer: (d)

Discipline5

181. A group G is complete if g →ig: G → Aut(g) is :

(a) Isomorphism

(b) Automorphism

(c) homomorphism

(d) hetromorphism

Answer: (a)

182. A _____ of a group G is a subgroup H such that αH = H for all automorphisms α of G.

(a) general subgroup

(b) characteristic subgroup

(c) normal subgroup

(d) argumented subgroup

Answer: (b)

183. Let Hi ≤ G for i ∈ {1, . . . , n}. Then which of the following sets doesn't satisfy the IDP properties ?

(a) Hi ←G, for all i

(b) G = H1 · · · Hn= {h1 · · · hn : hi ∈ Hi}

(c) h1 · · · hn = x1 · · · xn, with hi, xi ∈ Hi

(d) Hi def = H1 · · · Hi−1 · Hi+1 · · · Hn, Hi ∩ Hˆi = {1}

Answer: (c)

184. Which condition is not used to satisfy an inter direct product :

(a) G has a neutral identity element.

(b) Every element of G1 commutes with every element of G2.

(c) |G2 α1| = |G1 α2| = 1

(d) G1α1 = G1

Answer: (d)

185. Which condition is not equivalent regarding the group theory ?

(a) a ∈ G for all x ∈ G

(b) G1α1 = G1

(c) G2α1 is a singleton {d1} with d1α1= d1

(d) G1α1 ∩ G2α1 is a singleton {d1}

Answer: (a)

186. Which is not the level of transitive of conjugative classes :

(a) fold transitive

(b) double transitive

(c) inverse transitive

(d) transitive

Answer: (c)

187. A finite group G is a __ if and only if every element has order a power of p.

(a) conjugative group
(b) p-group
(c) cyclic group
(d) dihedral group

Answer: (b)

188. Every nontrivial finite p-group has ____ centre.

(a) nodal
(b) radial
(c) graphical
(d) non trivial

Answer: (d)

190. Every group of prime order is ?

(a) cyclic
(b) abelian
(c) triangular
(d) non abelian

Answer: (a)

Teaching Methodology

191. What is the main objective of punishment to st nts?

(a) It is a form of moral education.
(b) It is a form of immoral learning
(c) It is not a form of moral education
(d) It is not a form of immoral learning

Answer: (a)

192. Which of this is a benefit of an Activity Based Curriculum ?

(a) To develop creative thinking skills
(b) To develop acting skills
(c) To develop creative laughing skills
(d) To develop creative writing skills

Answer: (a)

193. Literacy skills specialised to history, science, mathematics, literature or other such matter is called?

(a) Basic Literacy
(b) Intermediate Literacy
(c) Foundational literacy
(d) Disciplinary Literacy

Answer: (d)

194. Maths study can help person develop which of the following skill?

(a) Discovering the beauty of the universe

(b) Opening doors in research

(c) better problem-solving skills

(d) Awareness of the world

Answer: (c)

195. In order to arrive at gender equalised school, a holistic approach involving various interventions is required. From following which one is holistic approach?

(a) Training teachers in the skills for making the teaching and learning processes responsive to the specific needs of girls and boys.

(b) Implement and enforce a policy for reporting child sexual abuse and handling disclosures from children.

(c) Provide programmes on role for parents to make them a part of their children's safety and security at school and while going to and from school.

(d) Make certain that campus security is in place so that all visitors are screened through the office and unusual incidents/visitors are handled carefully.

Answer: (a)

196. Gender differences can be noticed in relation to physical activities. Females are more into domestic activities, whereas men are into_____?

(a) Domestic responsibilities

(b) Offspring care

(c) cooking and care giving

(d) Manual labour

Answer: (d)

197. Narration is an art in itself which aims_____

(a) At presenting to the speaker

(b) At presenting to pupils

(c) At presenting to participators

(d) At presenting to the writers

Answer: (b)

198. Which of the following is not a characteristic of good information?

(a) Valid

(b) Reliable

(c) Timely

(d) Costly

Answer: (d)

199. Which is the first step towards evaluating?

(a) Define evaluation questions

(b) Define the purpose and parameters

(c) Select apt methods

(d) Identify the participants

Answer: (b)

200. _____of the UNCRPD deals with the right to education of persons with disabilities.

(a) Article 24

(b) Article 36

(c) Article 42

(d) Article 32

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

General Awareness

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

Arithmetic Ability

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

General English

61	**(c)**	62	**(a)**	63	**(b)**	64	**(a)**	65	**(b)**	66	**(d)**	67	**(b)**	68	**(d)**
69	**(b)**	70	**(c)**	71	**(d)**	72	**(c)**	73	**(c)**	74	**(a)**	75	**(c)**	79	**(a)**

Discipline1

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

Discipline2

123	**(b)**	124	**(c)**	127	**(b)**	128	**(c)**	129	**(c)**	131	**(a)**	132	**(c)**	134	**(d)**
135	**(b)**	136	**(c)**	137	**(b)**	138	**(d)**	139	**(b)**						

Discipline3

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

Discipline4

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

Discipline5

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

Teaching Methodology

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