**Level : 2**

**Exam. - 2018**

**MATHEMATICS**

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<th><strong>मुख्य प्रश्न-पुर्तिका का संख्या</strong></th>
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**निरीक्षक के हस्ताक्षर / Signature of Invigilator:**

अभ्यर्थी को 10 मिनट का समय प्रश्न-पुर्तिका पर छापे निर्देशों को पढ़ने तथा उस पर प्रश्नों के लिए पूरा करने के लिए दिया जाएगा। यदि प्रश्न-पुर्तिका व उस पर प्रश्न की मूल संख्या गलत लिखी हो तो अपनी दस्तावेज सहिष्णुता से निर्देश करने पर प्रश्न-पुर्तिका का बदल दिए तथा। इसी प्रकार, तभी यह स्वीकार किया जाएगा। इस 10 मिनटों के अंतर्गत, प्रश्नों के उत्तर अंकित करने के लिए पूरा 2 1/2 घंटे की समय दिया जाएगा। यदि किसी अभ्यर्थी को प्रश्न-पुर्तिका में दी गई किसी भी प्रश्न में कोई गलती हो तो इसके लिए अभ्यर्थी को पतेवाड़ा समाधान के उपलब्ध प्रश्न की देखभाल कर दिया जाएगा। अन्य अभ्यर्थी निरीक्षण संशोधन के दौरान इस समय में आप अपने प्रश्न-पुर्तिका के काफ़ी काफी में दर्शाना सकते हैं। इस प्रकार के, इस समय में प्रश्न प्रश्न की देखभाल कर दिया जाएगा।

**यदि किसी प्रश्न में हिंदी व अंग्रेजी माध्यम में मिलती है तो अंग्रेजी माध्यम का प्रश्न ही माना जाएगा।**

**If there is any variance between Hindi and English Version of any question then English Version would be considered correct.**

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<th><strong>अभ्यर्थी के लिए निर्देश / INSTRUCTIONS FOR THE CANDIDATES:</strong></th>
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<tbody>
<tr>
<td>1. ओ.आर.एमएस. उत्तर पत्रक प्रश्न-पुर्तिका के अन्दर रखें। जब आपने प्रश्न-पुर्तिका पढ़ने को कहा जाए, तो उत्तर पत्रक निकाल कर ध्यान से लिखें। नीले/काले बैंगनी पाइप पेन से लिखें। (The OMR Answer Sheet is inside this Question Booklet. When you are directed to read the Question Booklet, take out the OMR Answer Sheet and fill in the particulars carefully with blue/black ball point pen only.)</td>
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<td>2. पहला परिच्छेद का अंक 1 तथा प्रश्न-पुर्तिका में 150 प्रश्न हैं। कोई अंकानुसार प्रश्न ही नहीं है। (The test is of two-and-half hours duration and consists of 150 questions. There is no negative marking.)</td>
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<td>3. अपने उत्तर अंकित करने पर पत्रक पर निर्देश-लगाने के लिए वेंडी नीले/काले बैंगनी पाइप पेन का प्रयोग करें। अभ्यर्थी प्रश्न-पुर्तिका का प्रयोग करने एवं पत्रक पर प्रश्न को पहनें। (Use Blue/Black Ball Point Pen only for writing particulars on this page/darkening responses in the Answer Sheet. The candidate should remain careful in handling the question paper and in darkening the responses on the answer sheet.)</td>
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<td>4. प्रश्न 10 मिनट में, यदि तुम सुनिश्चित कर ले कि प्रश्न-पुर्तिका क्रमांक और उत्तर पत्रक क्रमांक एक हैं। अगर यह नहीं होता है तो अभ्यर्थी दूसरी प्रश्न-पुर्तिका और उत्तर पत्रक लेने के लिए पत्रक की पुरानी क्रमांक कराएं। (Within first 10 minutes, also ensure that your Question Booklet Serial No. and Answer Sheet Serial No. are the same. In case of discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of both the Question Booklet and the Answer Sheet.)</td>
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<th><strong>5. भाग-IV</strong></th>
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<td>भाग-IV : गणित (१० नंबर)</td>
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| **नोट :** क्रमांक इस पुर्तिका के अन्दर में दिये गए शेष निर्देशों को पढ़े। (Please read other remaining instructions given on the last page of this booklet.) |
PART 1

1. Which of the following is not true about dramatic play?
   (1) It is a form of active play.
   (2) It is known as make believe play.
   (3) It involves overt behaviour.
   (4) It is always reproductive.

2. 'Dyscalculia' is a type of:
   (1) Locomotor Disability
   (2) Learning Disability
   (3) Intellectual Disability
   (4) Visual Impairment

3. Which of the following is not true about the Broca's area of the brain?
   (1) It is located in the left frontal lobe.
   (2) It supports grammatical processing.
   (3) It is responsible for language production.
   (4) It is responsible for comprehending word meaning.

4. Which of the following theory assumes that Child Development is not a continuous process?
   (1) Cognitive Development Theory of Piaget
   (2) Behaviourism
   (3) Social Learning Theory
   (4) Ecological System Theory
5. The statement 'Personality is nothing but a set of learned responses', best describes which of the following view about personality?

(1) Behaviouristic view
(2) Structuralist view
(3) Functionalist view
(4) Cognitivist view

6. Which of the following is not an example of newborn 'reflexes'?

(1) Eye blink
(2) Sucking
(3) Swimming
(4) Driving Car

7. Which of the following is not true about children's play?

(1) The number of play activities decrease with increasing age.
(2) Play becomes increasingly social with increasing age.
(3) The number of playmates increases with increasing age.
(4) Play become increasingly sex-appropriate with increasing age.

8. The 'Three Stratum Theory' of Intelligence was given by:

(1) Piaget  (2) Binnet  (3) Carrol  (4) Cattle
9. Four year old Binny started wetting her bed after her parents brings home a new baby. Which of the following type 'defense mechanism' it is?

(1) Regression
(2) Suppression
(3) Rationalization
(4) Displacement

10. Which of the following statement is not true?

(1) Classical conditioning deals with voluntary behaviours.
(2) Operant conditioning deals with voluntary behaviours.
(3) Classical conditioning deals with involuntary behaviours.
(4) In operant conditioning, 'consequences' are important in framing an association.

11. Knowing 'how to ride a bicycle' is an example of:

(1) Procedural knowledge
(2) Declarative knowledge
(3) Explicit knowledge
(4) No option is correct

12. If a child is sharing with you what he did after he got up in the morning, he is using his:

(1) Semantic Memory
(2) Sensory Register
(3) Procedural Memory
(4) Episodic Memory

P. T. O.
13. Which of the following type is **not** a type of Intelligence, as given in Sternberg's Triarchial Theory of successful intelligence?

(1) Analytical Intelligence
(2) Creative Intelligence
(3) Musical Intelligence
(4) Practical Intelligence

14. The seat belt buzzer of a car, stops as soon as the driver put on the seat belt. It is an example of:

(1) Positive Reinforcement
(2) Negative Reinforcement
(3) Positive Punishment
(4) Negative Punishment

15. The example 'you scratch my back and I will scratch yours', indicates which type of morality as given by Piaget?

(1) Beginning of Morality of Cooperation
(2) Pre-conventional morality
(3) Realism
(4) Not related to moral concern

16. Meeta has overcome her fear of toy-snakes. However on one occasion her fear returned when she found toy-snake on her bed. Such return of fear can be termed as:

(1) Stimulus Generalization
(2) Stimulus Discrimination
(3) Spontaneous Recovery
(4) Extinction
17. Which of the following is not true about 'Zone of Proximal Development'?

(1) It is related to Vygotsky's Theory.
(2) It sets the upper limit on what the child is capable to learn.
(3) It is a range of tasks that a learner cannot perform without help of others but yet cannot perform independently.
(4) It is the upper limit of a task that a learner can successfully perform independently.

18. Out of the following alternative which one is not comes under processes in socialization?

(1) Learning to behave in socially approved way
(2) Playing approved social roles
(3) Development of social attitudes
(4) Approval of egocentric behaviour

19. Presentation of an unpleasant stimulus to decrease the occurrence of a response is known as:

(1) Positive Reinforcement
(2) Negative Reinforcement
(3) Punishment
(4) Motivator
20. कोहलबर्ग के अनुसार, अच्छा बालक/अच्छी बालिका की ओर उत्सुक होना संकेत हैः

(1) पूर्व लिकिक नैतिकता का
(2) भविष्य लिकिक नैतिकता का
(3) लिकिक नैतिकता का
(4) नैतिकता का सामाजिक

21. ब्रोनफेनब्रेनर के विकास के पारिप्रवर्तन के तंत्र
किसके के अनुसार, 'माता-पिता का कार्यस्थल' निम्नांकित में से किस तंत्र में समाप्त हैः

(1) सूचम तंत्र
(2) बुद्धि तंत्र
(3) मीठो तंत्र
(4) एकसी तंत्र

22. निम्नांकित में से कौन-सा कथन सत्य नहीं हैः

(1) मैथिक अक्षमता एवं अधिमाम अक्षमता दोनों समान नहीं है।
(2) अधिमाम अक्षमता युग्म बालक की IQ निश्चित रूप से 70 से कम होनी चाहिए।
(3) मैथिक अक्षमता 18 वर्ष की आयु से पूर्व होती है।
(4) मैथिक अक्षमता एवं अधिमाम अक्षमता दोनों ही विकासात्मक अक्षमताएँ हैं।

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20. According to Kohlberg, Good Boy/Good Girl orientation indicates :

(1) Pre conventional Morality
(2) Post conventional Morality
(3) Conventional Morality
(4) Relative Morality

21. Which of the following system contains 'Parents Work Place' as per the Bronfenbrenner's Ecological Theory of Development?

(1) Micro System
(2) Macro System
(3) Meso System
(4) Exo System

22. Which of the following statement is not correct?

(1) Intellectual Disability and Learning Disability are not same.
(2) A child with learning disability essentially has an IQ score less than 70.
(3) Intellectual Disability occurs before age 18.
(4) Intellectual Disability and learning Disability both are Developmental Disability.
23. यह आकलन जो अनुदेशन के दौरान या अनुदेशन के पूरा किया जाता है, उसे कहा जाता है:
   (1) योगात्मक आकलन
   (2) रचनात्मक आकलन
   (3) औपचारिक आकलन
   (4) निश्चात्मक आकलन

24. 'त्वलीनता' की सब्स्प्रियम ब्याख्या दी है:
   (1) सैमुल किंकर ने
   (2) लियो कैनर ने
   (3) बी.एफ. स्किनर ने
   (4) जेस स्वाटसन ने

25. विकासक्रम के दौरान धूप के सिर का विकास उसके पैरों से पहले होता है। यह विकास की कौन-सी प्रक्रिया के सबसे लगा है?
   (1) केंद्र से बाहर की ओर
   (2) सिर से पैर की ओर
   (3) समस्तता
   (4) एकीकरण

26. निम्नलिखित में से कौन-सी प्रक्रिया पियाज के संहारात्मक विकास की एक प्रक्रिया नहीं है?
   (1) सम्प्रतिक
   (2) आत्मसातीकरण
   (3) अनुक्रियात
   (4) शेपिंग

27. निम्नलिखित में से कौन-सा गार्डनर द्वारा दिया गया बुद्धि का एक प्रकार नहीं है?
   (1) संगीतीय बुद्धि
   (2) भाषायी बुद्धि
   (3) तार्किक एवं गणितीय बुद्धि
   (4) संभालात्मक बुद्धि

23. The Assessment done during or before instruction is known as:
   (1) Summative Assessment
   (2) Formative Assessment
   (3) Formal Assessment
   (4) Diagnostic Assessment

24. 'Autism' was first described by:
   (1) Samuel Kirk
   (2) Leo Kanner
   (3) B. F. Skinner
   (4) J. B. Watson

25. During the developmental period of foetus' head is well developed before his legs. This best describes which of the following tendency of development?
   (1) Proximo-distal
   (2) Cephalo-caudal
   (3) Uniformity
   (4) Integration

26. Which of the following is not a process of Cognitive Development as given by Piaget?
   (1) Assimilation (2) Accommodation
   (3) Adaptation (4) Shaping

27. Which of the following is not a type of intelligence as proposed by Gardener?
   (1) Musical Intelligence
   (2) Linguistic Intelligence
   (3) Logico-Mathematical Intelligence
   (4) Creative Intelligence
28. Which of the following is not related to the classical conditioning experiment?

(1) Extinction
(2) Spontaneous Recovery
(3) Shaping
(4) Stimulus Discrimination

29. A mother gently strokes her infant's forehead each time immediate before breast feeding. Soon, she noticed that each time the baby's forehead is stroked, he makes active sucking movement. The baby's behaviour best describes:

(1) Trial and Error learning
(2) Classical Conditioning
(3) Operant Conditioning
(4) Social Learning

30. In which of the following stage of Cognitive Development, as described by Jean Piaget, a child become capable of understanding 'Conservation'?

(1) Sensory Motor Stage
(2) Pre-operational Stage
(3) Concrete Operational Stage
(4) Formal Operational Stage
31. असंगत कथन छोटीएः
(1) नापक्ष इरादे से की जाने वाली मंजरण — दिल्ला
(2) वोपहर से पहले का समय — पुर्वल्लिहण
(3) जिसे देखकर रोगते खेले हो जाएं — लोमहर्षक
(4) बालुका युक्त तत्त/भूमि — सिक्ताः

32. किस वाक्य में सर्वनाम पदवंच का प्रयोग हुआ है?
(1) मेरे रिश्तेदारों में से कोई समय पर नहीं पहुँचा।
(2) रिश्तों में स्वार्थ देखने वाले युवा सानिध्य की ऊंचा पहले।
(3) राम ने लंका के अत्याचारी, राक्षस-राज रावण को मार डाला।
(4) पौंछकी नंगल से गिरा, मरेगा नहीं तो क्या जिंदा रहेगा।

33. अङ्क विधि वाला विकल्प छोटीएः
(1) पद + उम्मत = मदोममत
(2) विद्वान + मुख = विद्वानमुख
(3) तत्तू + उपराल्ल = तदोपराल्ल
(4) पठ + आयतन = पादयतन

34. किस विकल्प में तत्कुष समास नहीं है?
(1) वाक्क्षारुप (2) तीर्थांव
(3) अरण्यरोदन (4) मीनकेल्तु

35. तत्सम-तद्भव की दृष्टि से असंगत विकल्प छोटीएः
(1) वारताक — श्रीगण
(2) लोहमहास — लोमहास
(3) मत्तक — माथा
(4) आण्डका — सौट

36. वाचनिक दृष्टि से अङ्क विकल्प छोटीएः
(1) विद्वान (2) गीतांतरली
(3) भक्तगण (4) स्वामिभक्त

37. किस वाक्य में सर्वनामप्रयोग का प्रयोग हुआ है?
(1) तुम सब आ गए; अच्छे कहाँ रह गए।
(2) जो बाहर खड़ा है उसे अदर बुलाओ।
(3) तुम छायों के लिए कुछ फिरते हैं अवां
(4) कुछ तुम करो; कुछ मैं कहाँ।

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38. निम्न में से किस विकल्प में ‘गरुड़’ का पर्याय नहीं है?
(1) अहिंसेमत
(2) वैलंते
(3) हेरम्र
(4) -खगनाथ

39. ‘वयोवृद्ध’ शब्द में संधि है:
(1) स्वर संधि
(2) वर्णांग संधि
(3) विसर्ग संधि
(4) व्यंजन संधि

40. किस विकल्प में दो उपसनों का प्रयोग नहीं हुआ है?
(1) सारोपा
(2) साहाररणी
(3) पुनरुद्धार
(4) समाधि

41. अशुभ वाक्य चुटिएः
(1) आपसे लिस्ट करो मुझे आनन्द का आभास हुआ।
(2) मेरठ में कई वर्षीय स्थल है।
(3) यह छात्रवृति केवल छात्राओं के लिए है।
(4) मैं अपना मत स्पष्ट करना चाहता हूँ।

42. किस वाक्य में ‘इच्छार्थ वृत्त’ का प्रयोग हुआ है?
(1) ईश्वर तुम्हारा भला करे।
(2) कुप्पा यह प्रकरण जाँच दीजिए।
(3) लगता है इस वर्ष खूब वर्षा होगी।
(4) यदि वह पहली तौर पर आज सफल हो जाए।

43. निम्न में से भावावच्य चुटिएः
(1) गम्भीरों में रोज नहाया जाता है।
(2) नानी द्वारा कहानी सुनाई गई।
(3) कुता गारी रत भीतर था।
(4) किसानों द्वारा फसल काट ली गई है।

44. निम्न में ‘संकर शब्द’ किस विकल्प में नहीं है?
(1) विमानपर्वत
(2) डबलरोटी
(3) आमचुनाव
(4) हिन्दीकुण

45. ‘वह दिनभर लिखता रहा।’ वाक्य में प्रयुक्त क्रिया विशेषण का भेद हैंगत कीएः
(1) कल्विशिव क्रिया विशेषण
(2) रॉविशिव क्रिया विशेषण
(3) सेवावाचक क्रिया विशेषण
(4) परिसारवाचक क्रिया विशेषण
Direction: Answer the following questions by selecting the most appropriate option.

46. Choose the word which is spelt correctly:
   (1) Disentigration
   (2) Disintegration
   (3) Dissintegration
   (4) Desintegration

47. Choose the correct word for the following expression:
   One who makes maps or charts.
   (1) Cartoonist
   (2) Cartographer
   (3) Choreographer
   (4) Choirmaster

48. Fill in the blank with appropriate conjunction:
   Grievances cannot be redressed .............. they are known.
   (1) unless
   (2) and
   (3) but
   (4) before

49. "He wore a turban made of silk."
   The underlined words are:
   (1) Adverb
   (2) Adverb Phrase
   (3) Adjective Phrase
   (4) Noun Phrase

50. "There is a mystery about his death and the police are looking into it."
   The underlined phrasal verb means:
   (1) To investigate
   (2) To take care of
   (3) To look behind
   (4) To revise quickly

51. Fill in the blank with appropriate preposition:
   We stayed .............. Mumbai for five days.
   (1) in
   (2) at
   (3) into
   (4) by

52. Hearing the noise, the boy woke up:
   (1) Pronoun
   (2) Noun
   (3) Verb
   (4) Participle

53. Fill in the blank with the correct option:
   I have not heard the .............. news.
   (1) latest
   (2) late
   (3) latter
   (4) later
54. Choose the most appropriate modal for the blank:
When I was young, I .............. climb any tree in the forest.
(1) can  (2) must  
(3) may  (4) - could

55. Fill in the blank with appropriate preposition:
We’re going for a drive ........ the country.
(1) on  (2) at  
(3) -in  (4) for

56. Fill in the blank by choosing the correct option:
He is .............. his glasses.
(1) look for  
(2) look  
(3) -looking for  
(4) will look

57. Choose the correct answer from the options below:
"I took it home with me", She said.
(1) She just took it home.  
(2) She said she had taken it home with her.
(3) She said she would take it home.  
(4) She said she will take it home with her.

58. Choose the correct passive construction for the given sentence.
They were carrying the injured player off the field.
(1) The injured player was being carried  -off the field.  
(2) The injured player will be carried off the field.  
(3) The injured player must be taken off the field.  
(4) Carry the injured player off the field.

59. Choose the correct verb for the blank from the options below:
The earth .............. round the sun.
(1) move  
(2) moved  
(3) moves  
(4) shall move

60. "They arrived soon after."
The word 'after' is used as:
(1) Preposition  
(2) Adverb  
(3) - Adjective  
(4) Conjunction
Direction: Answer the following questions by selecting the most appropriate option.

61. Arjun travels half of his journey by train at the speed of 120 km/hr and rest half by car at 80 km/hr. What is his average speed?
   (1) 88 km/hr
   (2) 92 km/hr
   (3) 96 km/hr
   (4) 100 km/hr

62. If 11 oranges are bought for Rs. 10 and sold 10 oranges for Rs. 11. What is the gain in percentage?
   (1) 11%     (2) 21%
   (3) 25%     (4) 28%

63. Amulya does a piece of work in 2 days and Bindu does it in 6 days. In how many days will the two do it together?
   (1) 2/3 days
   (2) 3/2 days
   (3) 5/3 days
   (4) 3 days
64. A total of 324 coins of 20 paisa and 25 paisa make a sum of ₹ 71, then number of 20 paisa coins is:
(1) 124
(2) 140
(3) 200
(4) 210

65. How many 6's are there in the following number series, each of which is immediately preceded by 1 or 5 and immediately followed by 3 or 9?
26375642961346391569231654321967
(1) One
(2) Two
(3) Three
(4) Four

66. If "BORN" is coded as "APQO" and "LACK" is coded as "KBBL", then "GRID" will be coded as:
(1) FSEH
(2) SFHE
(3) FSHE
(4) FHSE

67. There are deer and peacocks in a zoo. By counting heads they are 80. The number of their legs is 200. How many peacocks are there?
(1) 20
(2) 40
(3) 52
(4) 60
68. Which set of numbers is like the given set?
2, 14, 16
(1) 2, 7, 8
(2) 2, 9, 16
(3) 3, 21, 24
(4) 4, 16, 18

69. Statements:
I. All players are doctors.
II. Some doctors are musicians.

Conclusions:
I. Some doctors are players as well as musicians.
II. All musicians are doctors.

Then which of the following is correct?
(1) Only conclusion I follows.
(2) Only conclusion II follows.
(3) Both conclusion I and II follow.
(4) Neither conclusion I nor II follows.

70. If '+' mean '×', '-' mean '÷', '+' mean '÷' and '×' mean '×', then
16 + 8 ÷ 6 - 2 + 12 = ?
(1) 22
(2) 24
(3) 23
(4) 120
71. A, B की बहिन है, C, B की माता है, D, C का पिता है, E, D की माता है, तो A का D से क्या सम्बन्ध है?
(1) बेटी
(2) माता
(3) बाबी/नानी
(4) दादा/नाना

72. निम्न श्रेणी का अगला पद ज्ञात करिएः
0, 5, 22, 57, 116, ?
(1) 205
(2) 216
(3) 192
(4) 207

73. एक टैंक $\frac{2}{5}$ भाग भरा है, यदि इसमें 16 लीटर पानी और भर दिया जाता है, तो वह $\frac{6}{7}$ भाग भर जाता है, तो टैंक की कुल शक्ति हैः
(1) 24 लीटर
(2) 35 लीटर
(3) 38 लीटर
(4) 42 लीटर

74. एक लीप वर्ष में विश्व दिनों की संख्या क्या होती है?
(1) 0
g(2) 1
(3) 2
(4) 3

71. A is B's sister, C is B's mother, D is C's father, E is D's mother, then how is A related to D?
(1) Daughter
(2) Mother
(3) Grand Mother
(4) Grand Father

72. Find the next term of the following series:
0, 5, 22, 57, 116, ?
(1) 205
(2) 216
(3) 192
(4) 207

73. A tank is $\frac{2}{5}$ part full. If 16 litres of water is added to the tank, it becomes $\frac{6}{7}$ part full, then total capacity of tank is:
(1) 24 litres
(2) 35 litres
(3) 38 litres
(4) 42 litres

74. What is the number of odd days in a leap year?
(1) 0
g(2) 1
(3) 2
(4) 3
75. Find the least number, when divided by 12, 15, 20 and 54, leaves in each case a remainder of 8:

(1) 504
(2) 540
(3) 546
(4) 548

76. If A's income is 40% less than that of B. How much percent B's income is more than that of A?

(1) 25%
(2) 40%
(3) 33\(\frac{1}{3}\)%
(4) 66\(\frac{2}{3}\)%

77. Find the least number by which 294 must be multiplied to make it a perfect square.

(1) 3
(2) 4
(3) 6
(4) 12
78. यदि पिन्ने $\frac{2}{5}$, $\frac{3}{8}$, $\frac{4}{9}$, $\frac{5}{13}$ तथा $\frac{6}{11}$ को बढ़ते हुए क्रम में व्यवस्थित किया जाता है तो वैसे स्थान पर कौन-सी पिन्ने होगी?

(1) $\frac{3}{8}$  
(2) $\frac{4}{9}$  
(3) $\frac{5}{13}$  
(4) $\frac{6}{11}$

79. प्रथम सात अभाज्य संख्याओं का औसत होगा:

(1) 8  
(2) 9  
(3) $8\frac{1}{7}$  
(4) $8\frac{2}{7}$

80. अंगांत को ज्ञात कीजिए:

(1) EJNO  
(2) HMQR  
(3) KPSU  
(4) NSWX

81. बहादुर नेता जिसे 19वीं शताब्दी के दौरान देशप्रेम के आरोप में गिरफ्तार किया गया:

(1) मुहम्मद जफर  
(2) गज्जान खान  
(3) मुबारक अली  
(4) सलमान खान

82. निम्नलिखित को सुपरिणित कीजिए:

शैक्षणिक क्षेत्र  
जिला

A. आई। आई। आई। टौ। (i) रोहतक  
B. आई। आई। एम। (ii) सीनीपट  
C. एन। आई। डौ। (iii) पंचकुला  
D. एन। आई। एफ। टौ। (iv) कुरुक्षेत्र

सबी कूट चुनिए:

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78. If the fractions $\frac{2}{5}$, $\frac{3}{8}$, $\frac{4}{9}$, $\frac{5}{13}$, and $\frac{6}{11}$ are arranged in ascending order, which one will be fourth place?

(1) $\frac{3}{8}$  
(2) $\frac{4}{9}$  
(3) $\frac{5}{13}$  
(4) $\frac{6}{11}$

79. Find the average of first seven prime numbers.

(1) 8  
(2) 9  
(3) $8\frac{1}{7}$  
(4) $8\frac{2}{7}$

80. Find out the odd-one:

(1) EJNO  
(2) HMQR  
(3) KPSU  
(4) NSWX

81. The Wahabi leader, who was arrested in charge of Sedition during 19th century:

(1) Muhammad Zafar  
(2) Ghazzan Khan  
(3) Mubarak Ali  
(4) Salman Khan

82. Match the following:

**Education Institute**  
**District**

A. I. I. I. T.  
(i) Rohtak  
B. I. I. M.  
(ii) Sonipat  
C. N. I. D.  
(iii) Panchkula  
D. N. I. F. T.  
(iv) Kurukshetra

Choose the correct code:

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</table>
83. How many Wildlife Sanctuaries are there in Jhajjar district?

(1) Two
(2) Three
(3) One
(4) Four

84. How many Tahsils are there in Haryana?

(1) 71
(2) 93
(3) 76
(4) 68

85. The area of Haryana, which was considered under the sphere of influence of Bhadanakas during the Pre-medieval period:

(1) Rewari
(2) Ambala
(3) Panipat
(4) Kurukshetra

86. Consider the following statements about Lala Murlidhar:

(a) He practiced Law at Ambala.
(b) He attended the first session of Congress held at Bombay.

Which of the above statement/statements is/are true?

(1) Only (a) is true.
(2) Only (b) is true.
(3) Neither (a) nor (b) is true.
(4) Both (a) and (b) are true.
87. Consider the following statements about KMP Expressway:
(a) It is also known as Western Peripheral Expressway.
(b) Five new cities will be developed along with the KMP Expressway.
Which of the above statement(s) is/are true?
(1) Only (a) is true.
(2) Only (b) is true.
(3) Neither (a) nor (b) is true.
(4) Both (a) and (b) are true.

88. Who among the following athletes won the Gold in Men's 800 m. race at Asian Games – 2018?
(1) Jinson Johnson
(2) Manjit Singh
(3) Arpinder Singh
(4) Rakesh Kumar

89. Where the Vulture Conservation and Breeding Center is situated?
(1) Kairu (2) Morni
(3) Zhabua (4) Pinjore

90. Which of the following districts has the lowest urban population?
(1) Mewat (2) Mahendragarh
(3) Jind (4) Sirsa
**Direction:** Answer the following questions by selecting the most appropriate option.

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
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<tbody>
<tr>
<td>91. 'A' complete a job in 2 days and 'B' completes it in 3 days and 'C' completes it in 4 days. If they work together and get Rs. 3900 for the job, then how much amount does 'B' get?</td>
<td>(2) Rs. 1200</td>
</tr>
<tr>
<td>92. If ( S ) is the total surface area of a cube and ( V ) is its volume, then which one of the following is correct?</td>
<td>(1) ( V^3 = 216 S^2 )</td>
</tr>
</tbody>
</table>
93. If \( \tan \theta = \cot 2\theta \), where \( 0 < \theta < \frac{\pi}{2} \),
then what is the value of \( \tan 5\theta \)?

(1) \( \frac{1}{\sqrt{3}} \)  
(2) 1  
(3) \( \sqrt{3} \)  
(4) 0

94. The arithmetic mean, geometric mean and median of six positive numbers
\( a, a, b, b, c, c \) where \( a < b < c \) are \( \frac{7}{3}, 2, 2 \) respectively. Then what is the sum of the squares of all the six numbers?

(1) 40  
(2) 42  
(3) 45  
(4) 48

95. What is the weighted mean of first 10 natural numbers whose weights are equal to the corresponding number?

(1) 7  
(2) 5.5  
(3) 5  
(4) 4.5

रफ़ कार्य के लिए जगह/SPACE FOR ROUGH WORK
96. 16 litres of a mixture contains milk and water in the ratio 5:3. If 4 litres of milk is added to this mixture, the ratio of milk to water in the new mixture would be:

(1) 2:1  
(2) 7:3  
(3) 4:3  
(4) 8:3

97. A trader sells two cycles at Rs. 1188 each and gains 10% on the first and loses 10% on the second. What is the profit or loss percent on the whole?

(1) 1% loss  
(2) 1% gain  
(3) 2% loss  
(4) No loss no gain
98. Two taps can fill a tub in 5 minutes and 7 minutes respectively. A pipe can empty it in 3 minutes. If all the three are kept open simultaneously, when will the tub be full?

1. 60 minutes
2. 85 minutes
3. 90 minutes
4. 105 minutes

99. What is the HCF of $8(x^5 - x^3 + x)$ and $28(x^6 + 1)$?

1. $4(x^4 - x^2 + 1)$
2. $2(x^4 - x^2 + 1)$
3. $(x^4 - x^2 + 1)$
4. None of the above
100. If Rs. 8400 is divided among A, B and C in the ratio $\frac{1}{5} : \frac{1}{6} : \frac{1}{10}$, what is the share of A?

(1) Rs. 1800  
(2) Rs. 3000  
(3) Rs. 3600  
(4) Rs. 4000

101. A person borrowed Rs. 7500 at 16% per annum compound interest. How much does he have to pay at the end of 2 years to clear the loan?

(1) Rs. 9900  
(2) Rs. 10092  
(3) Rs. 11000  
(4) Rs. 11052

102. What is the value of $\frac{(2.3)^3 - 0.027}{(2.3)^2 + 0.69 + 0.09}$?

(1) 0.3  
(2) 2.3  
(3) 1  
(4) 2

SPACE FOR ROUGH WORK
103. The first term of an A.P. is \(-2\) and 11th term is 18. Find its 15th term:

(1) 24  
(2) 25  
(3) 26  
(4) 27  

104. From a circular piece of cardboard of radius 3 cm, two sectors of 40° each have been cut off. The area of the remaining portion is:

(Use $\pi = \frac{22}{7}$)

(1) 11 cm$^2$  
(2) 22 cm$^2$  
(3) 33 cm$^2$  
(4) 44 cm$^2$  

105. If \((m\% \text{ of } m) + (n\% \text{ of } n) = mn\) is 2% less, then what percentage of \(m\) is \(n\)?

(1) 50%  
(2) 75%  
(3) 100%  
(4) Cannot be determined due to insufficient data  

---

**Rough Work for:** JEE/SPACE FOR ROUGH WORK
106. The value of $x$ which satisfy the equation $5^{1+x} + 5^{1-x} = 26$ are:

- (1) $-1, 1$
- (2) $0, 1$
- (3) $1, 2$
- (4) $-1, 0$

107. From the top of a tower, the angles of depression of two objects $P$ and $Q$ (situated on the ground on the same side of the tower) separated at a distance of $100(3-\sqrt{3})$ m are $45^\circ$ and $60^\circ$ respectively. The height of the tower is:

- (1) 200 m
- (2) 250 m
- (3) 300 m
- (4) None of the above

108. The perimeter of a rectangle having area equal to 144 cm$^2$ and sides in the ratio 4 : 9 is:

- (1) 52 cm
- (2) 56 cm
- (3) 60 cm
- (4) 64 cm
109. If the circumference of a circle is equal to the perimeter of a square, then which one of the following is correct?

1. Area of circle = Area of square
2. Area of circle > Area of square
3. Area of circle < Area of square
4. None of the above

110. If \(a + b + c = 6\) and \(a^2 + b^2 + c^2 = 26\), then what is \(ab + bc + ca\) equal to?

1. 0
2. 4
3. 2
4. 5

111. The sides of a triangular field are 41 m, 40 m and 9 m. The number of rose beds that can be prepared in the field, if each rose bed, on an average, needs 900 \(cm^2\) space, is:

1. 2000
2. 1800
3. 900
4. 800
112. If \( \alpha, \beta, \gamma \) are acute angles such that \( \sin \alpha = \frac{\sqrt{3}}{2}, \cos \beta = \frac{\sqrt{3}}{2} \) and \( \tan \gamma = 1 \), then what is \( \alpha + \beta + \gamma \) equal to:

(1) 105°  
(2) 120°  
(3) 135°  
(4) 150°

113. How many the first terms of the A.P. 2, 4, 6, 8, 10, ............ are needed to get sum 210?

(1) 11  
(2) 12  
(3) 13  
(4) 14

114. A person sold an article for Rs. 3600 and got a profit of 20%. Had he sold the article for Rs. 3150, how much profit would he have got?

(1) 4%  
(2) 5%  
(3) 6%  
(4) 10%
115. If $x + y + z = 0$, then what is $\frac{xyz}{(x+y)(y+z)(z+x)}$ equal to? (where, $x \neq -y, y \neq -z, z \neq -x$)

(1) $-1$
(2) $1$
(3) $xy + yz + zx$
(4) None of the above

116. \[ \frac{\cos^2(45^\circ + \theta) + \cos^2(45^\circ - \theta)}{\tan(60^\circ + \theta) \tan(30^\circ - \theta)} \]

(1) $-1$
(2) $0$
(3) $1$
(4) $2$

117. When an article is sold at $20\%$ discount, the selling price is Rs. 24. What will be the selling price when the discount is $30\%$?

(1) Rs. 25
(2) Rs. 23
(3) Rs. 21
(4) Rs. 20
118. Methods of presentation of data are:
   (1) Tables only
   (2) Graph only
   (3) Diagrams only
   (4) All of the above

119. The volume of a cone is equal to that of a sphere. If the diameter of base of cone is equal to the diameter of the sphere, what is the ratio of height of cone to the diameter of the sphere?
   (1) 2 : 1
   (2) 1 : 2
   (3) 3 : 1
   (4) 4 : 1

120. A figure is formed by revolving a rectangular sheet of dimensions 7 cm × 4 cm about its length. What is the volume of the figure thus formed?
   (1) 352 cm³
   (2) 296 cm³
   (3) 176 cm³
   (4) 616 cm³
121. A student was asked to multiply a number by 25. He instead multiplied the number by 52 and got the answer 324 more than the correct answer. The number to be multiplied was:

(1) 12  (2) 15  (3) 25  (4) 32

122. The equation whose roots are twice the roots of the equation $x^2 - 2x + 4 = 0$ is:

(1) $x^2 - 2x + 4 = 0$  (2) $x^2 - 2x + 16 = 0$  (3) $x^2 - 4x + 8 = 0$  (4) $x^2 - 4x + 16 = 0$

123. If for a triangle, the radius of the circumcircle is double the radius of the inscribed circle (incircle), then which one of the following is correct?

(1) The triangle is a right angled.
(2) The triangle is an isosceles.
(3) The triangle is an equilateral.
(4) None of the above.
124. The system of equations $x + 2y = 13$ and $3x + 6y = 9$ has:

1. Unique solution.
2. No solution.
3. Infinitely many solutions.
4. Finite number of solutions.

125. AD is a diameter of a circle and AB is a chord. If $AD = 34$ cm, $AB = 30$ cm, then the distance of AB from the centre of the circle is equal to:

1. 8 cm
2. 10 cm
3. 15 cm
4. 17 cm
126. If \( p = \tan^2 x + \cot^2 x \), then which one of the following is correct?

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<td>(1) ( p \leq 2 )</td>
<td>(2) ( p \geq 2 )</td>
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<tr>
<td>(3) ( p &lt; 2 )</td>
<td>(4) ( p &gt; 2 )</td>
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127. The circumference of two circles are in the ratio 2 : 3. What is the ratio of their areas?

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<tr>
<td>(1) 2 : 3</td>
<td>(2) 4 : 9</td>
</tr>
<tr>
<td>(3) 1 : 3</td>
<td>(4) 8 : 27</td>
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128. If the altitude of an equilateral triangle is \( \sqrt{3} \) cm, then what is its perimeter?

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<td>(1) 3 cm</td>
<td>(2) ( 3\sqrt{3} ) cm</td>
</tr>
<tr>
<td>(3) 6 cm</td>
<td>(4) ( 6\sqrt{3} ) cm</td>
</tr>
</tbody>
</table>
129. If one of the roots of quadratic equation $7x^2 - 50x + k = 0$ is 7, then what is the value of $k$?

(1) 7  (2) 1  
(3) $\frac{50}{7}$  (4) $\frac{7}{50}$

130. If $A = \frac{\pi}{6}$ and $B = \frac{\pi}{3}$, then consider the following statements:

I. $\sin A + \sin B = \cos A + \cos B$
II. $\tan A + \tan B = \cot A + \cot B$

Which of the above statements is/are correct?

(1) Only I  (2) Only II  
(3) Both I and II  (4) Neither I nor II
131. A \(\triangle DEF\) is formed by joining the midpoints of the sides of \(\triangle ABC\). Similarly, a \(\triangle PQR\) is formed by joining the midpoints of the sides of the \(\triangle DEF\). If the sides of the \(\triangle PQR\) are of lengths 4, 2 and 3 units, what is the perimeter of the \(\triangle ABC\)?

(1) 18 units  
(2) 36 units  
(3) 48 units  
(4) Cannot be determined due to insufficient data.

132. The number \(\sqrt{0.0001}\) is:

(1) a rational number less than 0.01.  
(2) a rational number.  
(3) an irrational number.  
(4) neither a rational number nor an irrational number.
133. What is the LCM of \(\frac{2}{3}, \frac{7}{9}\) and \(\frac{14}{15}\)?

(1) \(\frac{7}{3}\)
(2) \(\frac{14}{3}\)
(3) \(\frac{2}{3}\)
(4) \(\frac{1}{3}\)

134. A toy is in the form of a cone mounted on the hemisphere with the same radius. The diameter of the base of the conical portion is 12 cm and its height is 8 cm. What is the total surface area of the toy?

(1) \(132\pi \text{ cm}^2\)
(2) \(112\pi \text{ cm}^2\)
(3) \(96\pi \text{ cm}^2\)
(4) \(66\pi \text{ cm}^2\)
135. Consider the following statements:
I. \( x + 3 \) is the factor of \( x^3 + 2x^2 + 3x + 8 \).
II. \( x - 2 \) is the factor of \( x^3 + 2x^2 + 3x + 8 \).

Which of the statements given above is/are correct?
(1) I only
(2) II only
(3) Both I and II
(4) Neither I nor II

136. What is the greatest number that divides 13850 and 17030 and leaves a remainder 17?
(1) 477
(2) 159
(3) 107
(4) 87
137. What is the value of \( \cot 15^\circ \cot 20^\circ \cot 70^\circ \cot 75^\circ \)?

(1) -1  
(2) 0  
(3) 1  
(4) 2

138. What is the square root of \( \frac{0.324 \times 0.64 \times 129.6}{0.729 \times 1.024 \times 36} \)?

(1) 4  
(2) 3  
(3) 2  
(4) 1

139. If \( \frac{2}{x} + \frac{3}{y} = \frac{9}{xy} \) and \( \frac{4}{x} + \frac{9}{y} = \frac{21}{xy} \), where \( x \neq 0, y \neq 0 \), then what is the value of \( x + y \)?

(1) 2  
(2) 3  
(3) 4  
(4) 8
140. Consider the following statements:
I. 7710312401, is divisible by 11.
II. 173 is a prime number.
Which of the statements given above is/are correct?

(1) I only
(2) II only
(3) Both I and II
(4) Neither I nor II.

141. If $7\cos^2\theta + 3\sin^2\theta = 4$ and $0 < \theta < \frac{\pi}{2}$, then what is the value of $\tan\theta$?

(1) $\sqrt{7}$
(2) $\frac{\sqrt{7}}{3}$
(3) 3
(4) $\sqrt{3}$
142. \[(1 - \sin^2 \theta) \sec^2 \theta + \tan^2 \theta) (\cos^2 \theta + 1),\]
where \(0^\circ < \theta < 90^\circ\) is the value:

1. 2
2. > 2
3. < 2
4. None of the above

143. If side of an equilateral triangle is 'a', then area of this triangle is equal to:

1. \(\frac{3a^2}{2}\)
2. \(\frac{\sqrt{3}a^2}{2}\)
3. \(\frac{\sqrt{3}a^2}{4}\)
4. \(\sqrt{3}a^2\)
144. 1421 \times 1423 \times 1425 को 12 से विभाजित करने पर शेषफल क्या है?

(1) 1  
(2) 2  
(3) 3  
(4) 4

145. \((17^{23} + 23^{23} + 29^{23})\) को 23 से भाग देने पर शेषफल क्या है?

(1) 0  
(2) 1  
(3) 2  
(4) 3

144. What is the remainder obtained when \(1421 \times 1423 \times 1425\) is divided by 12?

(1) 1  
(2) 2  
(3) 3  
(4) 4

145. What is the remainder when \((17^{23} + 23^{23} + 29^{23})\) is divided by 23?

(1) 0  
(2) 1  
(3) 2  
(4) 3

रफ कार्य के लिए जगह/SPACE FOR ROUGH WORK
146. दो संकेती वृत्तों में से, बाह्य वृत्त का व्यास 26 सेमी है और 24 सेमी लंबी जीवा MN, आत्मरिक वृत्त पर स्पर्शी है। आत्मरिक वृत्त की विस्तार क्या है?

(1) 5 सेमी  (2) 6 सेमी  
(3) 8 सेमी  (4) 10 सेमी

147. 9 सेमी विस्तार वाले दो स्तंभों की लंबाई जीवा 0.4 सेमी व्यास वाले एकसमान तार की लंबाई क्या है?

(1) 243 मी  (2) 240 मी  
(3) 60.75 मी  (4) 60 मी

148. यदि \(a - b = 4\) और \(a^2 + b^2 = 40\) है, तो \(a\) और \(b\) धनात्मक पूर्णांक हैं, तो \(a^3 + b^6\) किसके बराबर है?

(1) 264  (2) 280  
(3) 300  (4) 324

146. Out of two concentric circles, the diameter of the outer circle is 26 cm and the chord MN of length 24 cm is tangent to the inner circle. The radius of the inner circle is:

(1) 5 cm  (2) 6 cm  
(3) 8 cm  (4) 10 cm

147. What is the length of the uniform wire of diameter 0.4 cm that can be drawn from a solid sphere of radius 9 cm?

(1) 243 m  (2) 240 m  
(3) 60.75 m  (4) 60 m

148. If \(a - b = 4\) and \(a^2 + b^2 = 40\), where \(a\) and \(b\) are positive integers, then \(a^3 + b^6\) is equal to:

(1) 264  (2) 280  
(3) 300  (4) 324
149. A hollow sphere of internal and external diameters 4 cm and 8 cm, respectively is melted into a solid cone of base diameter 8 cm. The height of the cone is:

(1) 11 cm
(2) 12 cm
(3) 14 cm
(4) 16 cm

150. In a \( \triangle ABC \), \( AD \) is the median through \( A \) and \( E \) is the mid point of \( AD \), and \( BE \) produced meets \( AC \) at \( F \), then \( AF \) is equal to:

(1) \( \frac{AC}{5} \)
(2) \( \frac{AC}{4} \)
(3) \( \frac{AC}{3} \)
(4) \( \frac{AC}{2} \)
6. Answers to questions in answer sheet are to be given by darkening complete circle using Black/Blue ball point pen as shown below:

The answer will be treated wrong, if it is marked, as given below:

If you fill more than one circle it will be treated as a wrong answer.

7. *Rough work should be done only in the space provided in the Question Booklet for the same.*

8. *The candidates should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet. Do not write your Roll No. anywhere else except in the specified space in the Answer Sheet.

10. *The candidates should not leave the Examination Hall without handing over their Answer Sheet to the Invigilator on duty and signing the Signature Chart twice. Cases where a candidate has not signed the Signature Chart will be treated as unfair means cases. All candidates have to affix left hand thumb impression on the OMR answer sheet at the place specified which should be properly inked.*

11. *All cases of unfair means will be dealt with as per Rules and Regulations of the Board.*

12. *No part of the Question Booklet and Answer Sheet shall be detached under any circumstances.*

13. *On completion of the test, the candidate must hand over the Answer Sheet to the Invigilator in the Room/Hall. The candidates are allowed to take away this Question Booklet with them.*