

YTS Examination – 1. 2019.

Instructions to Students

Read the following instructions carefully before starting to answer the question paper. Extra 10 minutes are already counted for reading the instructions and filling your information)

- 1) Write your name and details on BOTH OMR sheet and this question paper.
- 2) Write the details on OMR first and then on this Question paper booklet
- 3) Correctly fill your roll no and name
(You have to fill the corresponding Ovals against your roll no. correctly.)
- 4) Mention the question paper Test ID No. on the OMR clearly
- 5) Do NOT open the Staple on the right side until told by the invigilator.
- 6) This Question paper is in following format. (Type MCQ with four options & one correct)

Subject	Question No.	No. of questions	Marking system
Physics	1 to 10	10	+4 Positive For Correct answer -1 Negative for wrong answer 0 for Non attempted question Max 280 Min -70
Chemistry	11 to 20	10	
Biology	21 to 30	10	
Mathematics	31 to 40	10	
English Comprehension	41 to 48	8	
Mental ability	49 to 56	8	
Arithmetic	57 to 64	8	
Spatial Aptitude	64 to 70	6	
		70	

7) Total time 2 hrs (120 Minutes)

8) For Coloring the correct Oval use black or blue ball point pen only (No Pencil or Gel Pen)

Name _____

School _____

Cell No. _____

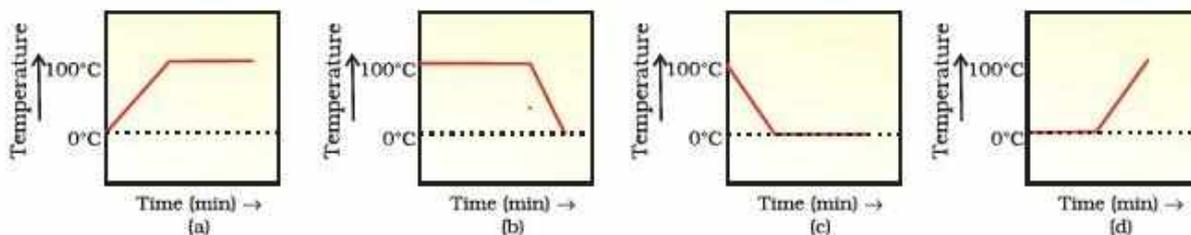
Test ID No.

Invigilator's Signature _____

Students Signature _____

Invigilator's Name _____

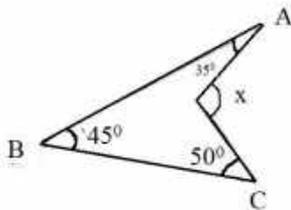
1. A student heats a beaker containing ice and water. He measures the temperature of the content of the beaker as a function of time. Which of the following would correctly represent the result? Justify your choice.



2. Ravi visited a Natural Gas Compressing Unit and found that the gas can be liquified under specific conditions of temperature and pressure. The specified conditions are
 (a) Low temperature, low pressure (b) High temperature, low pressure
 (c) High temperature, high pressure (d) Low temperature, high pressure
3. A object moves with uniform positive acceleration. Its velocity-time graph will be
 (a) A straight line parallel to the time axis
 (b) A straight line inclined at an obtuse angle to the time axis
 (c) A straight line inclined at an acute angle to the time axis
 (d) None of these.
4. The value of acceleration due to gravity of earth
 (a) Same on equator and poles (b) Is the least at equator
 (c) Is the least on poles (d) Increase from pole to equator
5. Why a goalkeeper in a game of football pulls his hands backwards after holding the ball shot at the goal?
 (a) Keep the ball in hands firmly (b) Reduce the force exerted by the ball
 (c) To exert larger force on the ball (d) None of these
6. What is the minimum resistance which can be made using five resistors each of $1/2$ Ohm?
 (a) $1/10$ Ohm (b) $1/25$ Ohm (c) 10 Ohm (d) 2 Ohm
7. The process involving the change of state from solid to gas is called
 (a) melting (b) boiling (c) fusion (d) sublimation
8. Which has the least energetic molecules?
 (a) Solids (b) Liquids (c) Gases (d) Plasmas
9. Which is of these is correct?
 (a) 1 atmosphere = $1.01 \times 10^{51} \cdot 01 \times 10^5$ Pa. (b) 1 atmosphere = $1.01 \times 10^{-51} \cdot 01 \times 10^{-5}$ Pa.
 (c) 1 atmosphere = $1.01 \times 10^{41} \cdot 01 \times 10^4$ Pa. (d) 1 atmosphere = $2.01 \times 10^{52} \cdot 01 \times 10^5$ Pa.
10. Density of a substance is defined as
 (a) ratio of mass and volume (b) product of mass and volume
 (c) ratio of mass and temperature (d) product of mass and temperature
11. What happens when calcium is treated with water?
 (i) It does not react with water
 (ii) It reacts violently with water
 (iii) It reacts less violently with water
 (iv) Bubbles of hydrogen gas formed stick to the surface of calcium
 (a) (i) and (iv) (b) (ii) and (iii) (c) (i) and (ii) (d) (iii) and (iv)
12. Although metals form basic oxides, which of the following metals form an amphoteric oxide?
 (a) Al (b) Ca (c) Na (d) Cu
13. Which of the following oxide cannot be reduced with carbon to obtain the metal?
 (a) MnO_2 (b) Cr_2O_3 (c) Al_2O_3 (d) All the above
14. Which among the following is not a base?
 (a) NaOH (b) NH_4OH (c) C_2H_5OH (d) KOH

15. Which of the following phenomena occur, when a small amount of acid is added to water?
 (a) Salt formation (b) Neutralization (c) Dilution (d) None of these
16. Salt form during reaction of sulphuric acid with copper
 (a) Na_2SO_4 (b) CuSO_4 (c) K_2SO_4 (d) NH_4Cl
17. In the following groups of materials, which group (s) contains only non-biodegradable items?
 (i) Wood, paper, leather (ii) Polythene, detergent, PVC
 (iii) Plastic, detergent, grass (iv) Plastic, Bakelite, DDT
 (a) (iii) (b) (iv) (c) (ii) and (iv) (d) (i) and (iii)
18. What percentage of solar energy is trapped and utilized by plants?
 (a) 1% (b) 10% (c) 5% (d) 2%
19. Excessive exposure of humans to U V-rays results in
 (i) damage to immune system (ii) damage to lungs
 (iii) skin cancer (iv) peptic ulcers
 (a) (i) and (ii) (b) (ii) and (iv) (c) (iii) and (iv) (d) (i) and (iii)
20. Depletion of ozone is mainly due to
 (a) pesticides (b) carbon monoxide
 (c) methane (d) chlorofluorocarbon compounds
21. The base of a flower to which all the parts of a flower are attached is called
 (a) receptacle (b) bud (c) flower base (d) Carpel
22. _____ is responsible for maintaining biological clock of body
 (a) Pineal (b) Kidney (c) Thyroid (d) Adrenal
23. Deficiency of _____ cause dwarfism
 (a) GH (b) FSH (c) LH (d) All of these
24. The only reptile having 4- chambered heart is:
 (a) Snake (b) Turtle (c) Lizard (d) Crocodile
25. Superior and inferior vena cava respectively carries blood from
 (a) Upper and lower parts of body (b) Lower and upper parts of body
 (c) Upper and lateral parts of the body (d) Lateral and lower parts of the body
26. Translocation utilizes energy (ATP) to transfer _____ into phloem tissue.
 (a) Sugar (b) Fat (c) Potassium (d) Lipid
27. Which vitamin helps in blood clotting?
 (a) Vitamin A2 (b) Vitamin B (c) Vitamin E4 (d) Vitamin K
28. Which of the following helps in maximum transport of oxygen?
 (a) Red blood corpuscles (b) Platelets
 (c) Plasma (d) White blood corpuscles
29. The deficiency of _____ in the blood of a person reduces the oxygen carrying capacity of blood resulting in breathing problems, tiredness and lack of energy.
 (a) Myoglobin (b) Hamemoglobin (c) Lehhaemoglobin (d) Albumin
30. The part of throat between the mouth and wind pipe is called _____
 (a) Larynx (b) Pharynx (c) Iris (d) Trachea
31. Find the 15th term of the arithmetic progression 10, 4, -2,
 (a) -72 (b) -74 (c) -76 (d) -78
32. Which of the following algebraic expression is/are not polynomials?
 (A) $x^3 + 2x^3 + \sqrt{7}x + 4$ (B) $5x^2 + 4\sqrt{x} - 11$
 (C) $\frac{x^3 + 3x^2 - 8x + 11}{4x\sqrt{x} - 3x + 3}$ (D) $\frac{x^3 + 3x^2 - 6x + 13}{x^2 + 1}$
 (a) A, B and C (b) A and C (c) B and C (d) A and D
33. The volume of the region between two concentric spheres of radii 2 and 5 is
 (a) 28 (b) 66 (c) 113 (d) 490

34. The point which divides the line joining the points A (1, 2) and B (-1, 1) internally in the ratio 1 : 2 is
 (a) $\left(\frac{-1}{3}, \frac{5}{3}\right)$ (b) $\left(\frac{1}{3}, \frac{5}{3}\right)$ (c) (-1, 5) (d) (1, 5)
35. If $173x + 197y = 149$ and $197x + 173y = 221$, then find (x, y)
 (a) (3, -2) (b) (2, 1) (c) (1, -2) (d) (2, -1)
36. The root of the equation $3x^2 - 2x + 3 = 0$ are
 (a) real and distinct (b) real and equal
 (c) imaginary (d) irrational and distinct
37. If the arithmetic mean of the first n natural numbers is 15, then n is _____
 (a) 15 (b) 30 (c) 14 (d) 29
38. Two dice are rolled together, what is the probability that the total score on the two dice is greater than 10?
 (a) $\frac{5}{6}$ (b) $\frac{1}{4}$ (c) $\frac{1}{6}$ (d) $\frac{1}{12}$
39. .



- $\angle x =$
 (a) 110° (b) 120° (c) 130° (d) 140°
40. The median of the data 5, 6, 7, 8, 9, 10 is _____
 (a) 7 (b) 8 (c) 7.5 (d) 8.5

Passage For Q No. 41 to 44

“Uncle” said Luke to the old Sean “You seem to be well fed, though I know no one looks after you. Nor have I seen you leave your residence at any time. Tell me how you manage it?”

“Because” Sean replied, “I have a good feed every night at Emperor’s orchard. After dark, I go there myself and pick out enough fruits to last a fortnight.”

Luke proposed to accompany his uncle to the orchard. Though reluctant because of Luke’s habit of euphoric exhibition of extreme excitement, Sean agreed to take him along. At the orchard while Sean hurriedly collected the fruits and left, Luke on the other hand at the sight of unlimited supply of fruits was excited and lifted his voice which brought Emperor’s men immediately to his side. They seized him and mistook him as the sole cause of damage to the orchard. Although Luke reiterated that he was a bird of passage, they pounded him mercilessly before setting him free

41. What does “bird of passage”; mean in the context of the given passage?
 (a) There was a bird in the orchard (b) Other people stole from the orchard
 (c) Emperor knew him personally (d) He did not visit orchard regularly
42. Which of the following can be inferred from the passage?
 (a) Luke did not take good care of his uncle
 (b) Emperor was a wicked man
 (c) Lack of self-control had put Luke into trouble
 (d) Luke had a habit of speaking loudly
43. How often did Sean visit the orchard?
 (a) Daily (b) Weekly
 (c) Once in a month (d) Every day after midnight

44. Choose the word which is most nearly the same in meaning as the word “Reluctant” used in the passage.
 (a) Against (b) Resistant (c) Opposed (d) **Disinclined**

Passage For Q No. 45 to 48

A man is known by the book he reads as well as by the company he keeps; for there is a companionship of books as well as of men and one should always live in the best company, whether it be of books or of men.

A good book may be among the best of friends. It is the same today that it always was, and it will never change. It is the most patient and cheerful of companions. It does not turn its back upon in times of adversity or distress. It always receives us with the same kindness; amusing and interesting us in youth, comforting and consoling us in age.

45. Which of the following would be the most appropriate title for the given passage?
 (a) Books show the reader’s character (b) Books as man’s abiding friends
 (c) Books are useful in the youth (d) The importance of books in old age.
46. Which of the following is opposite in meaning to the word ‘adversity’ occurring in the passage?
 (a) happiness (b) prosperity (c) progress (d) misfortune
47. The statement, “ a good book may be among best of friends,” in the passage means that
 (a) there cannot be a better friend than a good book
 (b) books may be good friends, but not better than good men
 (c) a good book can be included among the best of friends of mankind.
 (d) our best friends read the same good books.
48. According to the passage, which of the following statements is not true?
 (a) Good books as well as good men always provide the finest company.
 (b) A good book never betrays us
 (c) We have sometimes to be patient with a book as it may bore us.
 (d) A good book serves as a permanent friend.

Directions (Question 49 to 50): Read the following carefully and answer the questions given below it.

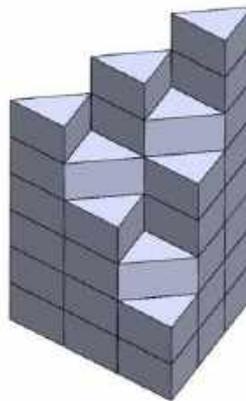
‘A + B’ means ‘A is the father of B’; ‘A – B’ means ‘A is the wife of B’; ‘A × B’ means ‘A is the brother of B’; ‘A ÷ B’ means ‘A is the daughter of B’.

49. If $P \div R + S + Q$, which of the following is true?
 (A) P is the daughter of Q (b) Q is the aunt of P
 (C) P is the aunt of Q (d) P is the mother of Q
50. If $P - R + Q$, which of the following statements is true?
 (A) P is the mother of Q (b) Q is the daughter of P
 (C) P is the aunt of Q (d) P is the sister of Q

Directions (Question 51 –52): Read the following information and answer the questions:

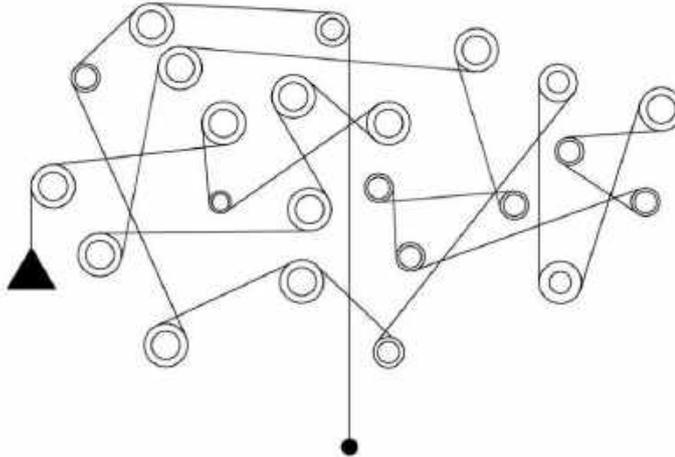
51. If ‘We are reaching Chandigarh’ means ‘zik pik lik hik’, ‘Chandigarh is really beautiful’ means ‘hik dik mik nik, ‘Is Mohit reaching there’ means ‘lik tik cik dik’ and ‘we really need mohit’ means ‘mik wik tik pik’, what is the code for Chandigarh?
 (a) tik (b) pik (c) lik (d) hik
52. If you used the above coding procedure, how would you code ‘cik’?
 (a) is (b) Mohit (c) there (d) reaching
53. 225, 336, 447, 558,.....,7710
 (a) 690 (b) 660 (c) 689 (d) 669
54. DE : 10 :: HI : ?
 (a) 10 (b) 18 (c) 20 (d) 14
55. AB, DEF, HIJK, ?, STUVWX
 (a) LMNO (b) LMNOP (c) MNOPQ (d) QRSTU
56. 23, 48, 99, 203, 413,.....
 (a) 927 (b) 837 (c) 937 (d) 437

57. $1035 \div [(3/4) \text{ of } (71 + 65) - 15 \frac{3}{4}] = ?$
 (a) 12 (b) 24 (c) 18 (d) 26
58. $(7 \times 7)^3 \div (49 \times 7)^3 \times (2401)^2 = 7^?$
 (a) 7 (b) 5 (c) 6 (d) 8
59. $\sqrt{13225} + \sqrt[3]{205379} + 52\% \text{ of } 700 = 408 + ?$
 (a) 156 (b) 218 (c) 189 (d) 130
60. $\sqrt{((27 \div 5 \times ?) \div 15)} = 5.4 \div 6 + 0.3$
 (a) 12 (b) 4 (c) 9 (d) 15
61. $(913 + 329 + 522 + 343) \div (18 + 24 - ? + 18) = 43$
 (a) 23 (b) 11 (c) 7 (d) 29
62. $(3/7) \text{ of } ? - (2/5) \text{ of } (13/16) \text{ of } 2160 = 12\% \text{ of } 900$
 (a) 2150 (b) 1540 (c) 1960 (d) 1890
63. A businessman had 17 employees working in a coal mine. All but nine died. How many was he left with?
 (a) 0 (b) 8 (c) 9 (d) 17
64. At the end of a business conference, the ten people present all shake hands with each other once. How many handshakes will there be altogether?
 (a) 20 (b) 45 (c) 55 (d) 90
65. Prof. Paityyam, in an attempt to create the world's most delicious dish, managed to merge a cylindrical Idli (diameter = 17 cm, height = 6 cm) with a torus shaped medu wada (inner hole diameter = 2 cm, outer diameter = 16 cm, and tube diameter i.e height of torus = 7 cm) such that the medu wada is parallel to the base of the Idli and the centeroids of the two solids coincide. How many surfaces does the resulting solid contain?
 (a) 7 (b) 5 (c) 10 (d) 17
66. Count the number of stacked triangular pieces in the image shown below.

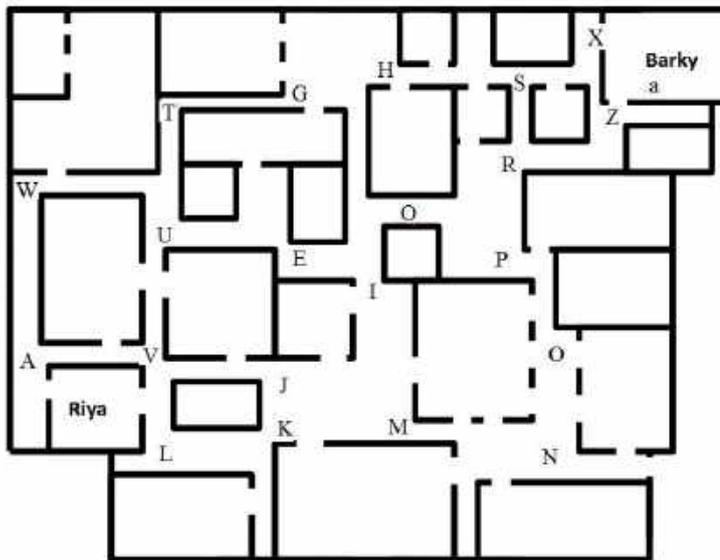


- (a) 49 (b) 50 (c) 46 (d) 52

67. Shown below is a combination of fixed pulleys. If the triangular load moves down, how many pulleys will rotate in the same direction as the smallest pulley (including itself)? The overlapping paths do not interfere with each other.

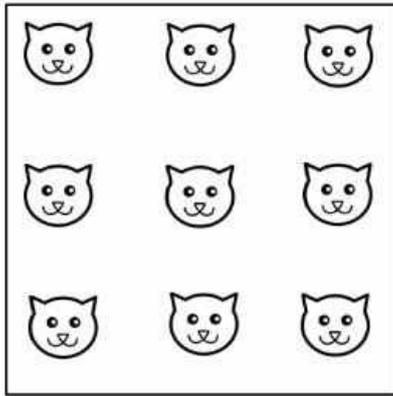


- (a) 13 (b) 11 (c) 10 (d) 15
68. The figure below shows the layout plan of the conservative Themmalwadi village which consists of a cluster of houses. Black lines represent walls and the openings in those walls represent either windows or doors. Also marked are the houses of Riya (who lives with her family) and Barkya, who are in love and having an affair. So, hidden from the eyes of the villagers, they regularly meet at night in Barkya's house. Themmalwadi is so conservative that even the sight of women on the street at night raises eyebrows. If Riya takes the path that has the least number of openings, what is the number of openings that she will have to pass by to get to Barkya's house?



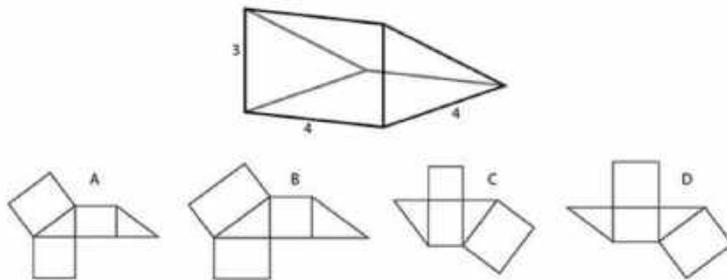
- (a) 3 (b) 6 (c) 8 (d) 2

69. Atul has nine cats that always fight with each other. He puts all of them into a square box. What is the least number of square partitions he must use to keep all the cats separated from each other? You may use any size of square partitions.



- (a) 1 or 4 (b) 1 or 3 (c) 2 or 3 (d) 2 or 4

70. Which of the options represent(s) correctly the opened up surfaces of the solid shown?



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