



ATOMIC ENERGY EDUCATION SOCIETY, MUMBAI
AEES EXCELLENCE EXAMINATION 2019

CLASS: IX

MARKS : 100
DURATION: 2 HOURS

Read the following instructions carefully before you answer the questions.

1. Answers are to be given on the OMR sheet provided to you.
2. There are 100 questions in this test.
Question number 1 to 10 are from English.
Question number 11 to 30 are from Mathematics.
Question number 31 to 50 are from Science.
Question number 51 to 70 are from Social science
Question number 71 to 75 are from Current affairs.
Question number 76 to 100 are from Mental Ability.
3. All the questions are compulsory.
4. Please read the instructions given on the OMR before marking the answers.
5. Rough work can be done anywhere in the booklet but not on the OMR or loose paper. Rough pages are also provided at the end of the question paper.
6. Every correct answer will be awarded one mark. No negative mark for wrong answer.
7. Return only the OMR sheet to the invigilator at the end of the test. The test-booklet can be carried by the candidates after the exam.

Name:	
Class/Sec:	
Roll No.:	
UID Number:	
Student Sign:	
Invigilator's Sign:	

10 Three of the sentences given below have the wrong word order. Pick the sentence with the correct word order.

- A He bluntly asked the teacher to either apologise or quit the school and the island. B He bluntly asked the teacher either to apologise or quit the school and the island.
- C He bluntly asked either the teacher to apologise or quit the school and the island. D He bluntly asked either to the teacher to apologise or quit the school and the island.

11 If $y^x = x^y$, then the value of $\sqrt[y]{\left(\frac{x}{y}\right)^x}$ is _____

- A $\sqrt[x]{x^{y-x}}$ B $\sqrt[y]{x^{x-y}}$
- C $\sqrt[x]{x}$ D $\sqrt[x]{x^y}$

12 $\left[\sqrt[3]{\sqrt[6]{a^9}}\right]^4 \left[\sqrt[6]{\sqrt[3]{a^9}}\right]^4 =$ _____

- A a^3 B a^2
- C a^4 D a^5

13 If $a^{\frac{1}{3}} + b^{\frac{1}{3}} + c^{\frac{1}{3}} = 0$, then $(a + b + c)^3 =$ _____

- A 27abc B 18abc
- C 36abc D 64abc

14 If $\frac{a}{ax-1} + \frac{b}{bx-1} = a + b$, then the value of x is _____

- A $\frac{a+b}{ab}, \frac{2}{a-b}$ B $\frac{a-b}{ab}, \frac{2}{a+b}$
- C $\frac{a+b}{ab}, \frac{2}{ab}$ D $\frac{a+b}{ab}, \frac{2}{a+b}$

15 The area of a circle inscribed in an equilateral triangle is 154 cm². The perimeter of the triangle is

- A $40\sqrt{3}$ cm B $42\sqrt{3}$ cm
- C 42 cm D $21\sqrt{3}$ cm

16 AB is a line segment and M is a mid-point. Semi circles are drawn with AM, MB and AD as diameters on same side of the line AB. A circle is drawn so that it touches all the semi circles. The radius of circle in terms of AB is

A $r = \frac{1}{5} AB$

B $r = \frac{1}{6} AB$

C $r = \frac{1}{4} AB$

D $r = \frac{1}{3} AB$

17 If PQ and RS are two perpendicular chords of the circle with centre O. then the relation between $\angle SPQ$ and $\angle OPR$ is

A greater than

B less than

C equal

D none of these

18 The cubic units of a sphere is equal to square units of sphere. Then the volume of a sphere in terms of π

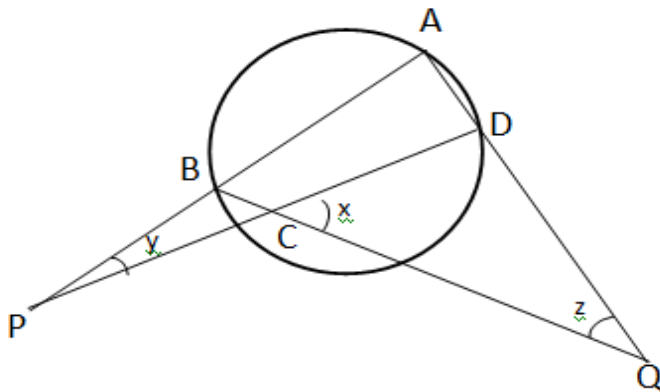
A 39π

B 33π

C 40π

D 36π

19 If $\frac{x}{3} = \frac{y}{4} = \frac{z}{5}$ then find the values of x and y from the given figure



A $x = 36^\circ, y = 48^\circ$ and $z = 60^\circ$

B $x = 40^\circ, y = 48^\circ$ and $z = 50^\circ$

C $x = 60^\circ, y = 28^\circ$ and $z = 60^\circ$

D $x = 06^\circ, y = 38^\circ$ and $z = 30^\circ$

20 In $\triangle ABC, \angle A = 80^\circ$ and $\angle MAN = 20^\circ$, if AM is the median and AN is perpendicular to BC, then $\angle B$ and $\angle C$ is

A $B=80^\circ$ and $C=90^\circ$

B $B=60^\circ$ and $C=50^\circ$

C $B=70^\circ$ and $C=30^\circ$

D $B=80^\circ$ and $C=40^\circ$

29 If $\sqrt[2020]{2\sqrt{7} - 3\sqrt{3}} \times \sqrt[4040]{55 + 12\sqrt{21}} = \underline{\hspace{2cm}}$

- A 0
- B 2
- C 3
- D 1

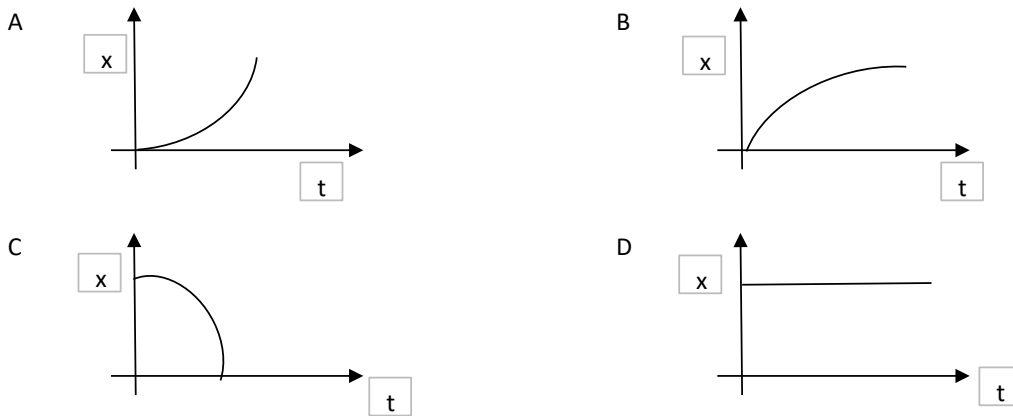
30 The mean of a group of 11 consecutive natural numbers is m. What will be the percentage change in the mean when next six consecutive natural numbers are included in that group?

- A 200/m %
- B 300/m %
- C 100/m%
- D 400/m %

31 A car travels from P to Q with with 20 km/h and from Q to P with 30 km/h.The average speed will be

- A 20 km/h
- B 24 km/h
- C 25 km/h
- D 28 km/h

32 Which of the following graphs is not correct? (Position time)



33 A ball of mass 0.40 kg falls freely from the top of a cliff of certain height and rebounds elastically with a speed of 20 m/s.The change in momentum of the ball is

- A 40 kg m/s
- B 16 kg m/s
- C 8 kg m/s
- D 2 kg m/s

34 How much water a pump of 5 kW power can raise in 5 minutes to a height of 15 m?(g=10 m/s²)

- A 5000 litre
- B 10000 litre
- C 1200 litre
- D 15000 litre

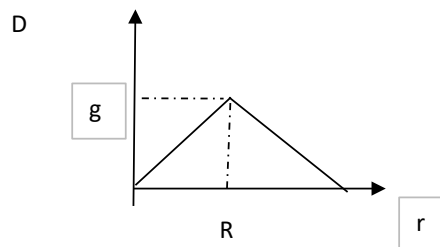
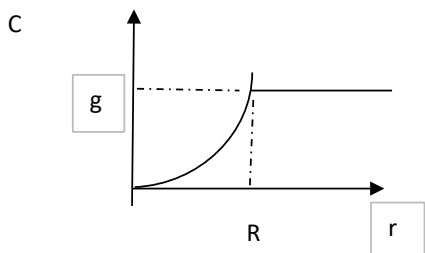
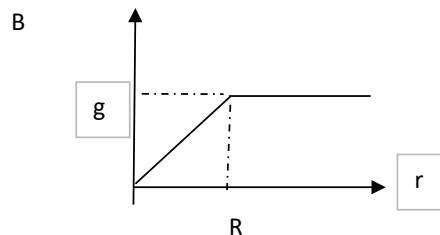
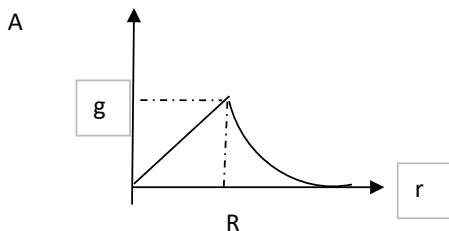
35 A sound wave has a frequency of 15 kHz and wavelength 3 mm.How much time will it take to travel 10 metre?

- A 0.1 second
- B 2.0 second
- C 2.22 second
- D 4.22 second

36 The volume of a substance is 40 cm³. The mass of the substance if its relative density is 2.5, will be

- A 100 mg
- B 100 g
- C 1 g
- D 10 g

37 Variation of g with height or depth is shown correctly in which graph



38 Which of the following weighs the most?

A 10^{23} molecules of H_2

B 1 mole of H_2O

C 1 mole of N_2

D 10^{22} atoms of oxygen

39 Cathode ray can be deflected by

A magnetic field only

B electric field only

C both A and B

D Chemicals

40 Sodium atom and sodium ion

A are chemically same

B have same number of protons

C have same number of electrons

D have different number of protons

41 Atomicity of ammonium phosphate molecule is

A 5

B 10

C 15

D 20

42 Arun has prepared 0.01% (by mass) solution of Sodium Chloride in water. Which of the following correctly represents the composition of the solution?

A 1.0 g of NaCl + 100 g of water

B 0.11 g of NaCl + 100 g of water

C 0.01 g of NaCl + 99.99 g of water

D 1.0 g of NaCl + 99.90 g of water

43 Identify the conditions where the distance between the molecules of hydrogen gas will increase?

(i) Compressing the hydrogen ballon

(ii) leaking some hydrogen out of the ballon

(iii) Addition of hydrogen gas in the ballon without increasing the volume of the ballon

(iv) increasing the volume of the ballon

A (i) & (iii)

B (i) & (iv)

C (ii) & (iii)

D (ii) & (iv)

- 44 Some bacteria entered a jam bottle. What could be the possible fate of the bacteria in the jam?
- A They will flourish as they get lots of nutrients B They will get plasmolysed by endosmosis
C They will get plasmolysed by exosmosis D They will swell up due to endosmosis
- 45 A child observed a cell under the microscope and noted the following features: i) tubular cell with broader lumen ii) perforated cross walls/end walls iii) No nucleus is present iv) always associated with a small nucleated cell with cellwall. The cell would be:
- A Human red blood cells B sieve tubes
C companion cells D tracheids
- 46 Two students Reshma and Fatima observed two animals specimens and wrote the observations as given below: Reshma's observation- i) metameric segmentation in the body ii) bilateral symmetry iii) presence of parapodia/ paired appendages : Fatima's observation - i) Jointed legs ii) chitinous skelton iii) body is divided into head thorax and abdomen. Which among the following are correct inference based on these observations?
- A Neries - Echinodermata ; Butterfly- Mollusca B Neries - Annelida; Butterfly - Echinodermata
C Neries - Echinodermata ; Butterfly- Annelida D Neries - Annelida; Butterfly - Arthropoda
- 47 Which among the following is/ are incorrect about HIV? i) HIV causes AIDS ii) HIV contains DNA as the genetic material iii) HIV contains RNA as the genetic material iv) HIV contains single stranded DNA as genetic material
- A (i) and (iii) B (i) and (ii)
C Only (i) D (i) , (ii) and (iii)
- 48 Carbon dioxide is called green house gas because
- A it appears green in UV rays B it is used for photosynthesis by green plants
C it is transparent to sunlight but traps heat D it is used in green house to increase green plants growth
- 49 Broiler chickens are fed with vitamin A and K rich diet. This is to
- A increase fat absorption and body weight B increase production of eggs
C improve the taste of the meat D increase their life span
- 50 A student counted the number of chloroplast in the cell of palisade layer of a leaf of potted plant kept in sunlight and found it to be 40.This plant was shifted indore and the student counted the number of chloroplast again after two weeks. What could be his possible observation?
- A the number of chloroplasts decrease as the plant doesn't get sunlight B the number of chloroplasts increase as the plant get less amount of sunlight
C no change in the number of chloroplast as it is genetic in nature D The chloroplasts become leucoplasts as they get less sunlight
- 51 In which batttle Napoleon was defeated in 1815?
- A Battle of Wandiwash B Battle of Waterloo
C Battle of Buxar D Battle of Plassey
- 52 What is the National Anthem of France?
- A Wilhelmus B Kimigaya
C Marseillaise D Marcha Real

- 53 The Muslim reformers within the Russian Empire were_____.
- A Nordic B Gypsies
C Jadidist D Cossacks
- 54 What was Gestapo?
- A Secret State Police B Security Service
C Storm Troops D Striking Force
- 55 Name the Propaganda Minister of Adolf Hitler.
- A Auschwitz B Wemer
C Goebbels D Gibbson
- 56 Who was the first Inspector General of Forests in India during the British Rule?
- A Logan Macpin B Carl Levis
C Dietrich Brandis D Maxmuller
- 57 Suez Canal was opened in the year_____.
- A 1869 B 1854
C 1898 D 1849
- 58 What do you mean by "Duns"?
- A River Valley B Longitudinal Valley
C Gorges D Estuary
- 59 What is Brhmaputra called in Tibet?
- A Dihang B Tsangpo
C Dibang D Lohit
- 60 A River joined by its tributaries, at approximately right angle, develops _____ pattern of drainage.
- A Dendritic B Trellis
C Rectangular D Radial
- 61 The Winter rainfall associated with Western Disturbances is locally known as _____.
- A Andhis B Kal Baisakhi
C Mahawat D Mang Showers
- 62 NPP stands for:
- A National Petroleum Production B National Population Policy
C National Pulse Production D National Progressive Policy
- 63 In which year the National Rural Employment Guarantee Act (NREGA) was passed?
- A 2003 B 2005
C 2006 D 2004
- 64 Where is the Academy of Development Science located?
- A Tamil Nadu B Madhya Pradesh
C Maharashtra D Gujarat
- 65 The raw materials and money in hand in an industry called_____.
- A Share Capital B Fixed Capital
C Working Capital D Foreign Capital

- 66 IMR stands for:
- | | |
|---------------------------------|--------------------------|
| A International Monetary Ratio | B Infant Mortality Rate |
| C International Maritime Region | D Indian Monetary Region |
- 67 Who was the founder of "Andhra Mahila Sabha"?
- | | |
|--------------------------|------------------------|
| A Sarojini Naidu | B Durgabai Deshmukh |
| C Dr. Muthulakshmi Reddy | D Vijayalakshmi Pandit |
- 68 Name the most dreaded prison in South Africa, where Nelson Mandela was imprisoned for 28 years.
- | | |
|--------------------|---------------------|
| A Hawaii Island | B Robben Island |
| C Mauritius Island | D Madagascar Island |
- 69 "Protect the Self Respect of Telugu" was the slogan used by _____.
- | | |
|----------------------|----------------------|
| A Chandra Babu Naidu | B Chandra Sekar Rao |
| C N.T. Rama Rao | D Dr.Rajasekar Reddy |
- 70 Right to Constitutional remedies is the "Heart and Soul of our Constitution" who said this?
- | | |
|-----------------------|----------------------------|
| A Dr. B.R. Ambedkar | B Motilal Nehru |
| C Dr. Rajendra Prasad | D Sardar Vallabhabai Patel |
- 71 India clinched _____ medal in SAFF U 15 at Nepal.
- | | |
|----------|---------------------|
| A Gold | B Silver |
| C Bronze | D None of the above |
- 72 The first WHO Global Conference on Air Pollution and Health was held in which city?
- | | |
|------------|----------|
| A New York | B Geneva |
| C Dubai | D Paris |
- 73 Which country is rejoining Commonwealth after 2 years of withdrawal?
- | | |
|------------|-------------|
| A Maldives | B Mauritius |
| C Thailand | D Indonesia |
- 74 Azim Premji has won Forbes India Leadership Awards 2018. He was the chairman of _____.
- | | |
|---------|-------------|
| A Wipro | B Infosys |
| C TCS | D Accenture |
- 75 Which country relations with India on new heights as investment expected in the energy sector?
- | | |
|-------------|------------|
| A Algeria | B Albania |
| C Australia | D Pakistan |
- 76 Choose the word which is different from the rest.
- | | |
|--------|--------|
| A Walk | B Pull |
| C Hear | D Run |
- 77 Choose the pair that best represents a similar relationship to the one expressed in the original pair of words.
METAPHOR : SYMBOL
- | | |
|------------------------|-------------------|
| A pentameter : poem | B rhythm : melody |
| C analogy : comparison | D nuance : song |

78 In this series, you will be looking at the letter pattern. Fill the blank of the series.
CMM, EOO, GQQ, _____, KUU

- A GRR
- B GSS
- C ISS
- D ITT

79 Today is Saturday, what will be the day after 59 days?

- A Monday
- B Tuesday
- C Sunday
- D Wednesday

80 If DEAR is written as FGCT, how will READ be written?

- A TFGC
- B TGCF
- C TGFC
- D FGTC

81 Fill the blank of the series . SCD, TEF, UGH, _____, WKL

- A CMN
- B UJI
- C VIJ
- D VIK

82 Rahul ranked ninth from the top and thirty-eighth from the bottom in a class. How many students are there in the class?

- A 45
- B 46
- C 47
- D 48

83 Arrange the words given below in a meaningful sequence.1. Wall 2. Clay 3. House
4. Room 5. Bricks

- A 5, 2, 1, 4, 3
- B 2, 5, 4, 1, 3
- C 2, 5, 1, 4, 3
- D 1, 2, 3, 4, 5

84 Find the missing term : 6,13,31,71,155,327, ?

- A 475
- B 575
- C 675
- D 775

85 Arrange the words given below in a meaningful sequence.1. Heel 2. Shoulder 3. Skull 4. Neck 5. Knee
6. Chest 7. Thigh 8. Stomach 9. Face 10. Hand

- A 3, 4, 7, 9, 2, 5, 8, 10, 6, 1
- B 3, 9, 4, 2, 10, 6, 8, 7, 5, 1
- C 2, 4, 7, 10, 1, 5, 8, 9, 6, 3
- D 4, 7, 10, 1, 9, 6, 2, 5, 8, 3

86 Out of the four figures marked (1), (2), (3) and (4) three are similar in a certain manner. However, one figure is not like the other four. Choose the figure which is different from the rest.

1 2 3 4



- A 1
- B 2
- C 3
- D 4

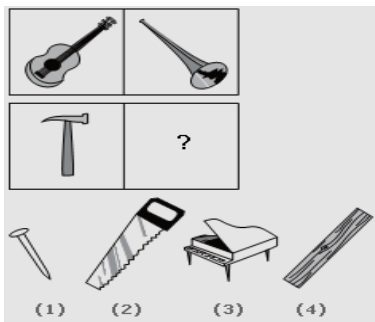
92 Look at this series: 7,9,12,17,24,35 ... What number should come next?

- A 44
- B 48
- C 54
- D 58

93 Look at this series: 11, 14,23,50,131,374 , ... What number should come next?

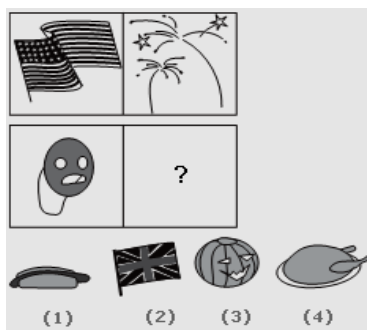
- A 1002
- B 1100
- C 1103
- D 1203

94 Choose the picture that would go in the empty box so that the two bottom pictures are related in the same way as the top two are related.



- A 1
- B 2
- C 3
- D 4

95 Choose the picture that would go in the empty box so that the two bottom pictures are related in the same way as the top two are related.



- A 1
- B 2
- C 3
- D 4

96 Choose the alternative which closely resembles the water-image of the given combination



- A 1
- B 2
- C 3
- D 4

Rough page

Rough page

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AEES EXCELLENCE EXAMINATION 2019

CLASS IX

ANSWER KEY

Q.NO	CORRECT OPTION
1	C
2	B
3	A
4	A
5	A
6	D
7	B
8	C
9	C
10	B
11	B
12	C
13	A
14	D
15	B
16	B
17	C
18	D
19	A
20	C
21	A
22	C
23	D
24	A
25	D
26	B
27	B
28	C
29	D
30	B
31	B
32	C
33	B
34	B
35	C
36	B
37	A
38	C
39	C
40	B
41	D
42	C
43	D
44	C
45	B
46	D
47	QUESTION CANCELLED
48	C
49	A
50	B

51	B
52	C
53	C
54	A
55	C
56	C
57	A
58	B
59	B
60	B
61	C
62	B
63	B
64	C
65	C
66	B
67	B
68	B
69	C
70	A
71	C
72	B
73	A
74	A
75	A
76	C
77	C
78	C
79	B
80	B
81	C
82	B
83	C
84	C
85	B
86	B
87	C
88	C
89	B
90	B
91	D
92	B
93	C
94	B
95	C
96	D
97	C
98	D
99	A
100	C