

Question Booklet Code

A

Question Booklet Sr. No.

045

Roll No.

OMR Sheet No.

ET-1930
ENTRANCE EXAM. FOR MCA
(THREE YEAR COURSE), 2019-20

Time : 1½ Hours

Maximum Marks : 90

Number of Pages in this Booklet : 20

Number of Questions in this Booklet : 90

Instructions for the Candidate :

- (i) Check this booklet carefully for the sequence of pages and questions. If it is defective due to pages/questions missing or not in serial order or any other discrepancy it should be got replaced immediately from the invigilator within the period of 5 minutes. Afterwards neither the Question Booklet will be replaced nor any extra time will be given.
- (ii) After this verification write your Roll No. and OMR Sheet Number on this Question Booklet.
- (iii) **Use only Black or Blue ball point pen.**
- (iv) This paper consists of **90** multiple choice type questions. Each question has four alternative answers (A), (B), (C) and (D). **Only one of these alternative answers is correct.** You are required to darken completely the circle of correct answer in the OMR Sheet.
- (v) There is no **negative marking.**
- (vi) Do not write anything other than relevant entries or put any mark on any part of the OMR Sheet, which may disclose your identity, otherwise you will render yourself liable to disqualification.
- (vii) Use of electronic gadgets such as pager, cell phone, calculator and log table etc. is prohibited.
- (viii) Rough Work may be done in the end of this booklet.
- (ix) You have to **return the OMR Sheet** to the invigilator at the end of the examination compulsorily.

ET-1930/KD/2228

[P.T.O.]

2228 / **1**

SEAL

ET-1930
ENTRANCE EXAM. FOR MCA
(THREE YEAR COURSE), 2019-20

PART-I
(Mathematical Ability)

1. Monday falls on 4th April, 1998. What was the day 3rd November, 1987?
(A) Monday (B) Sunday
(C) Thursday (D) Wednesday

2. In a chess tournament, each of the six players will play with all other players exactly once. How many matches will be played during the tournaments?
(A) 12 (B) 15
(C) 30 (D) 36

3. A boat can travel with a speed of 13 km / hr in still water. If the speed of the stream is 4 km/hr, find the time taken by the boat to go 68 km downstream.
(A) 2 hrs (B) 3 hrs
(C) 4 hrs (D) 5 hrs

4. If 10 people can do a piece of work in 5 days, working 2 hours a day, how long will 2 people take to do the same work, working 5 hours a day?
(A) 5 (B) 8
(C) 10 (D) 15

5. In a cricket match, five batsmen P, Q, R, S and T scored an average of 36 runs. S scored 5 more than T; T scored 8 fewer than P; Q scored as many as S and T combined; and Q and R scored 107 between them. How many runs did T score?
(A) 20 (B) 28
(C) 29 (D) 24

6. Find the quadratic equations whose roots are the reciprocals of the roots of $2x^2 + 5x + 3 = 0$?
(A) $3x^2 + 5x + 2 = 0$ (B) $5x^2 + 3x + 2 = 0$
(C) $3x^2 - 5x - 2 = 0$ (D) None

7. In a group of buffaloes and ducks, the number of legs are 24 more than twice the number of heads. What is the number of buffaloes in the group?
- (A) 6 (B) 18
(C) 12 (D) 24
8. A train 150 m long is running at a speed of 68 kmph. How long does it take to pass a man who is running at 8 kmph in the same direction as the train?
- (A) 5 sec (B) 9 sec
(C) 12 sec (D) 15 sec
9. If 5 women or 8 girls can do a work in 84 days. In how many days can 10 women and 5 girls do the same work?
- (A) 32 days (B) 48 days
(C) 52 days (D) 38 days
10. The ratio between the speeds of two trains is 7: 8. If the second train runs 440 kms in 4 hours, then the speed of the first train is:
- (A) 47.4 km/hr (B) 57.19 km/hr
(C) 68.13 km/hr (D) 96.25 km/hr

Questions 11–15 :

In each of the following questions, a number series is given with one term missing. Choose the correct alternative that will continue the same pattern and fill in the blank spaces.

11. 2, 7, 14, 23, ?, 47

- (A) 31 (B) 28
(C) 34 (D) 38

12. 4, 9, 13, 22, 35 ?

- (A) 57 (B) 70
(C) 63 (D) 75

13. 5, 11, 17, 25, 33, 43, ?
 (A) 49
 (C) 52
 (B) 51
 (D) 53
14. 0.5, 0.55, 0.65, 0.8, ?
 (A) 0.7
 (C) 0.95
 (B) 0.9
 (D) 1
15. 13, 35, 57, 79, 911, ?
 (A) 1145
 (C) 1117
 (B) 1113
 (D) 1110
16. Every month Rani gives 65% her salary to her mother. She spends 15% of her salary and saves the remainder. She saves \$ 130 more than what she spends. What is her monthly salary?
 (A) \$2600
 (C) \$2200
 (B) \$2450
 (D) \$2050
17. P and Q collected some phones cards in the ratio 3 : 2. When P gave away 42 of his phone cards, the ratio of the number of P's phone cards to Q's phone cards became 1 : 3. How many phone crads did Q collect?
 (A) 36
 (C) 24
 (B) 48
 (D) 60
18. The car hire charges in a city comprise of fixed charges together with the charge for the distance covered. For a jounery of 12 km, the charge paid is Rs. 89 and for a jounery of 20km, the charge paid is Rs. 145. What will the person have to pay for travelling a distance of 30km?
 (A) Rs. 315
 (C) Rs. 415
 (B) Rs. 215
 (D) Rs. 210
19. The foot of a ladder is 6 m away from the wall and its top reaches a window 8 m above the ground. If the ladder is shifted in such a way that its foot is 8 m away from the wall, to what height does its tip reach?
 (A) 6 m
 (C) 10 m
 (B) 8 m
 (D) 4 m

20. 1000 tickets of a lottery were sold and there are 5 prizes on these tickets. If Saket has purchased one lottery ticket, what is his probability of winning a prize?

- (A) 0.005 (B) 0.006
(C) 0.004 (D) 0.003

$$\frac{2}{3} \times \frac{4}{7} \times \frac{\pi r^3}{2}$$

21. A cylindrical container of radius 6 cm and height 15 cm is filled with ice cream. The whole ice cream has to be distributed to 10 children in equal cones with hemispherical tops. If the height of the conical portion is four times the radius of its base, find the radius of the ice cream cone.

- (A) 3 cm (B) 4 cm
(C) 6 cm (D) 5 cm

$$\frac{2}{7} \times 6 \times 6 \times 15 = \frac{10}{10}$$

22. A circular field has a circumference of 360 km. Three cyclists start together and can cycle 48 km, 60 km and 72 km a day, round the field. When will they meet again?

- (A) 20 days (B) 30 days
(C) 22 days (D) 15 days

$$\frac{3}{6} \times \frac{3}{6} \times \frac{3}{15} \times \frac{3}{4} = \frac{4}{3}$$

23. Kunal bought a suitcase with a 15% discount on the labelled price. He sold the suitcase for Rs. 2880 with 20% profit on the labelled price. At what price did he buy the suitcase?

- (A) Rs. 2040 (B) Rs. 2400
(C) Rs. 2604 (D) Rs. 2640

$$\frac{4}{3} \times \frac{\pi r^3}{3} + \frac{4}{3} \times \frac{\pi r^3}{3} = \frac{4}{3} (2\pi r^3)$$

24. The cost of a table and chair are in the ratio of 5:7. If the cost of the chair and table is increased by 20% and 10% respectively, then what will be the new ratio?

- (A) 16 : 17 (B) 55 : 84
(C) 60 : 77 (D) None of these

$$\frac{8}{3} \times r^3 = \frac{16}{3} \times r^3$$

$$184 \times \frac{10}{3} = 236 \times 15 \times \frac{10}{3}$$

25. As observed from the top of a light house, 100 m above sea level, the angle of depression of a ship sailing towards it directly, changes from 30 to 45 degrees. Determine the distance travelled by the ship during the period of observation.

- (A) 75.3 m (B) 68.59 m
(C) 73.2 m (D) 74.56 m

26. Kavleen wanted to save at least Rs. 6500 for sending her daughter to school next year (after 12 months). She saved Rs. 450 in the first month and raised her saving by Rs. 20 every next month. How much will she be able to save in the next 12 months?
- (A) Rs. 5600 (B) Rs. 6500
(C) Rs. 6720 (D) Rs. 6550
27. A peacock is sitting on the top of a pillar 9 m high. From a point 27 m away from its bottom, a snake is coming to its hole in the pillar. Seeing the snake, Peacock pounces on it. If their speeds are equal, at what distance would the snake be caught from the hole?
- (A) 13 m (B) 10 m
(C) 11 m (D) 12 m
28. A man running around a race course notes that the sum of the distance of the two flag posts from him is always 10 m and the distance between the flag posts is 8 m. The area of the path he encloses is (in sq m)
- (A) 15π (B) 12π
(C) 18π (D) 8π
29. A father with 8 children takes them 3 at a time to the zoo, as often as he can without taking the same three children together more than once. The number of times he will go to the zoo, is
- (A) 336 (B) 112
(C) 56 (D) 48
30. A man completes $\frac{5}{8}$ of his job in 10 days. At this rate, how many more days will it take him to finish his job?
- (A) 5 (B) 6
(C) 7 (D) 8
31. Gas is being pumped into a spherical balloon at the rate of $30 \text{ ft}^3/\text{min}$. Then the rate at which the radius increases when it reaches the value 15 ft, is (in ft/min)
- (A) $\frac{1}{30}\pi$ (B) $\frac{1}{15}\pi$
(C) $\frac{1}{20}\pi$ (D) $\frac{1}{25}\pi$

32. An insurance salesman sells policies to 5 men, all of identical age and in good health. The probability that a man of this particular age will be alive after 30 years is $\frac{2}{3}$. The probability that after 30 years all the five people will be alive is
- (A) $\frac{1}{16}$ (B) $\frac{16}{81}$
(C) $\frac{32}{243}$ (D) None of these
33. There are 100 families in a society. If 40 families buy newspaper A, 30 buy newspaper B, 30 buy newspaper C, 10 buy newspaper A and B, 8 buy newspaper B and C, 5 buy newspaper A and C and only 3 buy all 3 newspapers. Number of families who do not buy any newspaper are :
- (A) 20 (B) 80
(C) 0 (D) 40
34. A sum of Rs. 1000 is to be divided among two brothers such that if the interest being compounded annually is 5% per annum, then the money with the first brother after 4 years is equal to the money with the second brother after 6 years. Find the share of second brother.
- (A) Rs. 524.38 (B) Rs. 475.62
(C) Rs. 1000 (D) None of these
35. An amount of Rs. 15,000 is invested at 10% per annum for one year. If the interest is compounded half-yearly, then what amount will be received at the end of the year?
- (A) 16527.50 (B) 16427.50
(C) 16527.50 (D) 16537.50
36. How many 4-letter words with or without meaning can be formed out of the letters of the word, 'LOGARITHMS', if repetition of letters is not allowed?
- (A) 2520 (B) 5040
(C) 400 (D) 40
37. Let N be the greatest number that will divide 1305, 4665 and 6905, leaving the same remainder in each case. Then the sum of the digits in N is
- (A) 4 (B) 5
(C) 6 (D) 8

38. How much does a watch lose per day, if its hand coincide every (A minutes)?
 (A) $32 \frac{8}{11}$ mins (B) $36 \frac{5}{11}$ mins
 (C) 90 mins (D) 96 mins
39. A vessel is filled with liquid, 3 parts of which are water and 5 parts syrup. How much of the mixture must be drawn off and replaced with water so that the mixture may be half water and half syrup?
 (A) $\frac{1}{3}$ (B) $\frac{1}{4}$
 (C) $\frac{1}{5}$ (D) $\frac{1}{7}$
40. If Rs. 10 be allowed as true discount on a bill of Rs. 110 due at the end of a certain time, then the discount allowed on the same sum due at the end of double the time is
 (A) Rs. 20 (B) Rs. 21.81
 (C) Rs. 22 (D) Rs. 18.33
41. If $\log(ab) + \log(ba) = \log(a + b)$, then
 (A) $a + b = 1$ (B) $a - b = 1$
 (C) $a = b$ (D) $a^2 - b^2 = 1$
42. In what ratio must a grocer mix two varieties of pulses costing Rs. 15 and Rs. 20 per kg respectively so as to get a mixture worth Rs. 16.50 kg?
 (A) 3 : 7 (B) 5 : 7
 (C) 7 : 3 (D) 7 : 5
43. Two persons starting from the same place walk at a rate of 5 kmph and 5.5 kmph respectively. What time they take to be 8.5 km apart, if they walk in the same direction?
 (A) 17 hrs (B) 22 hrs
 (C) 25 hrs (D) 12 hrs
44. The speed of a 100 m long running train A is 40% more than the speed of another 180 m long train B running in the opposite directions. To find out the speed of train B, which of the information given in statements P and Q is sufficient?
 P : The two trains crossed each other in 6 seconds.
 Q : The difference between the speeds of the two trains was 26 kmph.
 (A) Only P is sufficient (B) Only Q is sufficient
 (C) Both P and Q are needed (D) Both are not sufficient

45. A goat is tied to one corner of a square plot of side 12m by a rope 7m long. Find the area it can graze?
- (A) 155 sq m (B) 19.25 sq m
(C) 144 sq m (D) 38.5 sq m
46. In an examination, a student was asked to find $\frac{3}{14}$ of a certain number. By mistake, he found $\frac{3}{4}$ of it. His answer was 150 more than the correct answer. Find the given number.
- (A) 190 (B) 250
(C) 280 (D) 350
47. Find the missing number in the following series:
6 120 12 108 24 ? 48 84
- (A) 60 (B) 74
(C) 96 (D) 108
48. A bag contains 4 white, 5 red and 6 blue balls. Three balls are drawn at random from the bag, the probability that all of them is red is
- (A) $\frac{1}{22}$ (B) $\frac{3}{22}$
(C) $\frac{2}{91}$ (D) $\frac{2}{77}$
49. The present worth of Rs. 1404 due in two equal half-yearly instalments at 8% per annum simple interest is
- (A) Rs. 1325 (B) Rs. 1300
(C) Rs. 1350 (D) Rs. 1500
50. A motorbike race was scheduled to start at 4.10 pm; however, it started 10 minutes behind schedule. If the motorbike that came first finished one hour and fifteen minutes after the race began, and the motorbike that came in second place finished 15 minutes after this, at what time did the motorbike that came second cross the finish line?
- (A) 5:30 am (B) 4:30 pm
(C) 5:40 pm (D) 5:50 pm

PART-II
(Logical and Analytical Ability)

51. In a certain language, CALCUTTA is coded as GEPGYXXE, which word would be coded as ISQJCB?

- (A) BOMBYA
- (C) BOMYAB

- (B) BOMBAY
- (D) BOBAYM

52. One evening before sunset two friends Sumit and Mohit were talking to each other face to face. If Mohit's shadow was exactly to his right side, which direction was Sumit facing?

- (A) North
- (C) West

- (B) South
- (D) East

53. Complete the next element in the series

10, 19, 40, 77, 158,

- (A) 311
- (C) 301

- (B) 307
- (D) 299

54. Choose the correct alternative :

abb _ baa _ a _ bab _ ab

- (A) abba
- (C) ccac

- (B) abab
- (D) aabb

55. Find the missing character in the following figure :

13	54	?
7	45	32
27	144	68

- (A) 42
- (C) 6

- (B) 36
- (D) 4

56. If $31 + 72 = 26$;

$52 + 45 = 32$

then, what is the value of $47 + 83$

(A) 130

(B) 44

(C) 22

(D) 88

57. In a row of girls, Kaminya is fifth from left and Preeti is sixth from right. When they exchange their positions, then Kaminya becomes thirteen from the left. What will be Preeti's position from the right?

(A) 7th

(B) 11th

(C) 14th

(D) 18th

Questions 58 to 61:

- (i) There is a group of five persons A, B, C, D and E.
- (ii) One of them is a horticulturist, one is a physicist, one is a journalist, one is an industrialist and one is an advocate.
- (iii) Three of them- A, C and advocate prefer tea to coffee and two of them- B and the journalist prefer coffee to tea.
- (iv) The industrialist and D and A are friends to one another but two of these prefer coffee to tea.
- (v) The horticulturist is C's brother.

58. Who is horticulturist?

(A) C

(B) A

(C) D

(D) B

59. Who is an industrialist?

(A) C

(B) A

(C) D

(D) B

60. Which of the following groups includes a person who likes tea but is not an advocate?
(A) ACE (B) DE
(C) BD (D) None of these
61. Who is a physicist?
(A) A (B) B
(C) D (D) C
62. The time by my watch is 10 minutes to 7, find the angle between hour hand and the minute hand.
(A) 110 (B) 120
(C) 105 (D) 95
63. Fill in the missing letter in the following series
S, V, Y, B, ?
(A) C (B) D
(C) E (D) G

Questions 64 to 67:

P, Q, R, S, T, V and W are seven students of a college. Each of them has a favourite subject from Physics, Chemistry, English, Biology, History, Geography and Philosophy, not necessarily in the same order. Each of them also has a favourite sport Football, Cricket, Hockey, Volleyball, Badminton, Table Tennis and Basketball, not necessarily in the same order. R likes Philosophy and his favourite sport is Hockey. The one who likes Football likes English. T's favourite sport is not Badminton or table Tennis. V does not like either History or Biology. The one whose favourite sport is Basketball does not like Physics. W likes Chemistry and his favourite sport is Volleyball. S likes Geography. Q's favourite sport is Badminton V does not like English and his favourite sport is not Basketball. P's favourite sport is Cricket. The one whose favourite sport is Badminton does not like Biology.

64. Which subject does P like?
(A) History (B) Biology
(C) Chemistry (D) Data inadequate

65. Who likes History?
- (A) P (B) R
(C) Q (D) V
66. Whose favourite sport is Basketball?
- (A) S (B) W
(C) Q (D) Data inadequate
67. Which subject does T like?
- (A) Biology (B) Physics
(C) Chemistry (D) None of these
68. Two bus tickets from city A to B and three tickets from city A to C cost Rs. 77 but three tickets from city A to B and two tickets from city A to C cost Rs. 73. What are the fares for cities B and C from A?
- (A) Rs. 4, Rs. 23 (B) Rs. 13, Rs. 17
(C) Rs. 15, Rs. 14 (D) Rs. 17, Rs. 13

69. What will replace the question mark?

5	4	7	8
6	9	5	10
3	7	2	?

- (A) 1 (B) 4
(C) 3 (D) 6
70. In three coloured boxes - Red, Green and Blue, 108 balls are placed. There are twice as many balls in the green and red boxes combined as there are in the blue box and twice as many in the blue box as there are in the red box. How many balls are there in the green box?
- (A) 18 (B) 36
(C) 54 (D) None of these

[P.T.O.]

Questions 76 to 80 :

Out of the given alternatives, choose the one which can be substituted for the given words or sentences:

76. One who walks in one's sleep:

(A) dreamer

(C) neomatic

(B) sommambulist

(D) ignorant

77. Unable to pay one's debt:

(A) beggar

(C) poor

(B) insolvent

(D) borrower

78. A cure for all diseases:

(A) panacea

(C) antibiotic

(B) cure

(D) remedy

79. A word no longer in use:

(A) obsolete

(C) outdated

(B) extant

(D) nervous

80. A place for keeping bees:

(A) aviary

(C) cage

(B) apiary

(D) nest

Questions 81 to 83 :

In British schools most pupils learn French or German. In a few schools you can also learn Italian, Spanish or Russian. Not many pupils learn Latin now. All pupils must study one foreign language until they are 16. Schools usually organize school trips to France or Germany. Pupils travel in a group with their teachers. They stay in a hotel or they go camping. Some schools have an exchange with another school in France or Germany. A group of pupils from the British school go to the exchange town. Each pupil has a partner and they stay with their partner's family. They sometimes go to school with their partner. Later in the year the pupils from France or Germany come to Britain and stay with their British partners. Exchange are very useful, because you can learn about daily life in another country.

81. In Britain, nowadays, not many pupils learn
- (A) French and German
 - (B) Italian and Spanish
 - (C) Russian
 - (D) Latin
82. Until British pupils are 16, they must study
- (A) one foreign language
 - (B) two foreign language
 - (C) a lot of foreign languages
 - (D) their own language
83. In an exchange scheme, each pupil has a
- (A) family's partner
 - (B) teacher
 - (C) partner
 - (D) school

Questions 84 to 87 :

Laws of nature are not commands but statements of acts. The use of the word "law" in this context is rather unfortunate. It would be better to speak of uniformities in nature. This would do away with the elementary fallacy that a law implies a law giver. If a piece of matter does not obey a law of nature it is punished. On the contrary, we say that the law has been incorrectly started.

84. If a piece of matter violates nature's law, it is not punished because
- (A) it is not binding to obey it
 - (B) there is no superior being to enforce the law of nature
 - (C) it cannot be punished
 - (D) it simply means that the facts have not been correctly started by the law
85. Laws of nature differ from man-made laws because
- (A) the former state facts of Nature
 - (B) they must be obeyed
 - (C) they are natural
 - (D) unlike human laws, they are systematic
86. The laws of nature based on observation are
- (A) conclusion about the nature of the universe
 - (B) true and unfalsifiable
 - (C) figments of the observer imagination
 - (D) subject to change in the light of new facts
87. The author is not happy with the word 'law' because
- (A) it connotes rigidity and harshness
 - (B) it implies an agency which has made them
 - (C) it does not convey the sense of nature's uniformity
 - (D) it gives rise to false beliefs

[P.T.O.]

Questions 88 to 90:

Male lions are rather reticent about expanding their energy in hunting more than three quarters of kills are made by lionesses are in front, tensely scanning ahead, the cubs lag playfully behind and the males bring up the rear, walking slowly, their massive heads nodding with each step as if they were bored with the whole matter. But slothfulness may have survival value. With lionesses busy hunting, the males function as guard for the cubs, protecting them particularly from hyenas.

88. The male lions generally do not go for hunting because

- (A) they do't like it
- (B) they want lioness to get training
- (C) they wish to save their vigour for other things
- (D) they are very lazy

89. Male lions protect their cubs

- (A) from the members of their own species
- (B) from hyenas only
- (C) from hyenas as much as from other enemies
- (D) more from hyenas than from other animals

90. Lioness go for hunting

- (A) all alone
- (B) with their male partners only
- (C) with their cubs and male partners
- (D) with their cubs only