



University Admission Test for BS-Mathematics

Name: _____.

Application #: _____.

Discipline: _____.

Session: _____.

DATE: _____.

<u>Student Signature</u>	<u>Invigilator Signature</u>	<u>Examiner Signature</u>	<u>Final Score</u>

<u>Q</u>	<u>Ans</u>	<u>Q</u>	<u>Ans</u>
<u>1</u>		<u>23</u>	
<u>2</u>		<u>24</u>	
<u>3</u>		<u>25</u>	
<u>4</u>		<u>26</u>	
<u>5</u>		<u>27</u>	
<u>6</u>		<u>28</u>	
<u>7</u>		<u>29</u>	
<u>8</u>		<u>30</u>	
<u>9</u>		<u>31</u>	
<u>10</u>		<u>32</u>	
<u>11</u>		<u>33</u>	
<u>12</u>		<u>34</u>	
<u>13</u>		<u>35</u>	
<u>14</u>		<u>36</u>	
<u>15</u>		<u>37</u>	
<u>16</u>		<u>38</u>	
<u>17</u>		<u>39</u>	
<u>18</u>		<u>40</u>	
<u>19</u>			
<u>20</u>			
<u>21</u>			
<u>22</u>			

University Admission Test for M.Phil

Instructions

1. The exam would be of 1 hour without any extra time.
2. DONOT unstapled your sheet under any circumstance. If found the paper will be canceled immediately.
3. Do not Mark anything on Question Book. Use sheets provided by Examinations Invigilators for computation.
4. Use of CALCULATOR AND MOBILE PHONES is not permissible in exam. If a student is found using, it would result is disciplinary action and immediate expulsion from exam.
5. Mark your answers on Answer Book provided by Putting the letter of your answer in CAPITAL LETTER in front of the question number.
6. Overwriting and duplication of answer would be considered as an incorrect answers.
7. There are no negative marks
8. Read the questions carefully before answering.

GOOD LUCK

(1-2) In each of the following antonym questions, a word printed in capital letters precedes five lettered words or phrases. From these five lettered words or phrases, pick the one most nearly opposite in meaning to the capitalized word.

1. OMNIPOTENT:

A.	Weak	C.	Sour
B.	Strong	D.	Safe

2. NERVOUS:

A.	Courageous	C.	Puzzle
B.	Bold	D.	Trainee

(3-6) Please read the passage below and answer the questions on the basis of what is stated or implied

To be happy and really safe, one ought to have at least two or three hobbies and they must all be real. It is no use starting late in life to say "I will take an interest in this or that". A man may acquire great knowledge of topics unconnected with his daily work and yet hardly get any benefit or relief.

A.		C.	
B.		D.	

3. The writer argues that for real happiness

A.	More than one hobbies are preferable	C.	Hobbies are quite important
B.	Two or three hobbies are essential	D.	Hobbies should be interesting

4. The phrase 'ought to' in the first sentence suggests

A.	Liking	C.	Compulsion
B.	Likelihood	D.	Preference

5. The words 'this or that' in the second sentence refer to

A.	Hobbies	C.	Daily work
B.	Topics	D.	None of the above

6. Select the choice closest in meaning to the word 'hardly' in the last sentence

A.	Rarely	C.	Infrequently
B.	Never	D.	Scarcely

(7-8) Each question below consists of a related pairs of words or phrases, followed by five lettered pairs of words or phrases, Select the lettered pair that best expresses a relationship similar to that expressed in the original pair.

7. Degree: Temperature

A.	ounce : weight	C.	time : length
B.	fathom : volume	D.	light : heat

8. PICK : GUITAR

A.	peg : ukelele	C.	string : banjo
B.) pipe : organ	D.	bow : violin

9. Pick the synonyms of **Rigorous**:

A.	easy	C.	careful
B.	tedious	D.	None of above

10. Pick the synonyms of **Prompt**:

A.	delayed	C.	laborious
B.	fictitious	D.	Well timed

11. If A is a singular matrix then $|A| = ..$

A.	1	C.	2
B.	0	D.	None

12. $\frac{d}{dx}(x^n) = \dots$

A.	nx^{n-1}	C.	nx
B.	0	D.	1

13. $\int_0^\pi \cos x dx = \dots$

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

14. The transpose of a zero matrix is..

A.	Identity Matrix	C.	Unity matrix
B.	Zero matrix	D.	Non-singular

15. In which of the following m is the slope of line

A.	$y = mx + c$	C.	$my = x - c$
B.	$y = 2mx + c$	D.	$y - cx = m$

16. The roots of equation $x^2 - 7x + 10 = 0$ are

A.	(1,0)	C.	(2,5)
B.	(3,5)	D.	(1,10)

17. The quadratic formula is for equation $ax^2 + bx + c = 0$ is ..

A.	$x = \frac{b \pm \sqrt{b^2 - 4ac}}{2a}$	C.	$x = \frac{2b \pm \sqrt{b^2 - 4ac}}{2a}$
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B.	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	D.	None of above
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18. If A and B are non-singular matrices then $(AB)^{-1} = :$

A.	$A^{-1}B^{-1}$	C.	$B^{-1}A^{-1}$
B.	O	D.	I

19. The number of subsets of a set having 3 elements is

A.	2	C.	8
B.	4	D.	0

20. The matrix with single row is called

A.	Column Matrix	C.	Row Matrix
B.	Identity Matrix	D.	None

21. The additive inverse of $\frac{2}{3}$ is

A.	$\frac{3}{2}$	C.	0
B.	$-\frac{3}{2}$	D.	$-\frac{2}{3}$

22. The magnitude of the vector $3\hat{i} + 4\hat{j}$ is

A.	25	C.	1
B.	0	D.	20

23. If a horse runs around the rim of a ground having 1km radius. How much distance would have he covered if he has completed two rounds

A.	3π	C.	2π
B.	4π	D.	5π

24. A car was bought at 500000 Rs and sold at 400000 Rs. What is the percentage of loss the owner beard?

A.	20%	C.	10%
B.	5%	D.	6%

25. What is the average height of the mountain range. If the range has 5 mountains with heights of 8000, 7000, 10000, 5000, 15000 meters?

A.	9500	C.	9000
B.	2800	D.	5000

26. Which of them is a purely imaginary number

A.	$2 + 3i$	C.	10
B.	$3i$	D.	$3 + 6i$

27. The maximum value of the function e^{-x} on the interval $[0,2]$ is

A.	1	C.	2
B.	0	D.	e^2

28. Which of the equation represents a parabola

A.	$y^2 = 4ax$	C.	$y - x = 0$
B.	$y = 4ax^2$	D.	none

29. $\cos^2\theta - \sin^2\theta = \dots$ +

A.	$\cos 2\theta$	C.	0
B.	1	D.	$\sin 2\theta$

30. $\cos^2\theta + \sin^2\theta = \dots$ +

A.	$\cos 2\theta$	C.	0
B.	1	D.	$\sin 2\theta$

31. The cost price of 20 articles is the same as the selling price of x articles. If the profit is 25%, find out the value of x

A.	15	C.	25
B.	18	D.	16

32. If selling price is doubled, the profit triples. What is the profit percent?

A.	100	C.	10513
B.	6623	D.	120

33. In a shop, the profit is 320% of the cost. If the cost increases by 25% but the selling price remains constant, find out approximately what percentage of the selling price is the profit?

A.	250	C.	100
B.	70	D.	30

34. A vendor bought bananas at 6 for a rupee. How many for a rupee must he sell to gain 20%?

A.	3	C.	4
B.	5	D.	6

35. Two employees X and Y are paid a total of Rs. 550 per week by their employer. If X is paid 120 percent of the sum paid to Y, how much is Y paid per week?

A.	150	C.	250
B.	300	D.	200

36. How many 3-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.	720	C.	420
B.	None of Above	D.	5040

37. The angle between the minute hand and the hour hand of a clock when the time is 8.30, is

A.	75	C.	80
B.	90	D.	100

38. How many times in a day, are the hands of a clock in straight line but opposite in direction?

A.	48	C.	22
B.	24	D.	12

39. At what time between 3 o'clock and 4 o'clock, both the needles of a clock will coincide each other?

A.	16211 minutes past 3	C.	
B.	16411 minutes past 3	D.	

40. If 6 men can complete a work in 15 hours. Then 10 men, working on the same speed, will complete the same work in _____ hours.

A.	7	C.	8
B.	9	D.	10