QB SERIES : D

2360

Countersigned on Verification

TEACHER-ON-DUTY

JADAVPUR UNIVERSITY

Admission test for.....20.....

SUBJECT.....

DATE OF EXAMINATION.....

INSTRUCTIONS TO CANDIDATE

1. Total marks: 50
2. Duration of Examination: One Hour.
3. Total number of MCQ type question =25
4. The correct answer will be awarded 2 marks but for an incorrect answer 1 (one) mark will be deducted.
5. The correct answer shall have to be marked by filling in the appropriate circle in black or blue ink.
6. Multiple answers to any question will not be awarded any marks.
7. Candidates must show their admit cards on demand.
8. Candidates found taking an unfair means are liable to be expelled from the examination Hall and all the papers in which he/she has already appeared are liable to be rejected.
9. Candidates will not be permitted to leave the examination hall before 45 minutes from the commencement of the examination.

FOR OFFICE USE ONLY

Bar code: ☐ A. Marks obtained: ☐

C. No. of incorrect answers: ☐

MCQ TYPE QUESTION

1. In a group of persons travelling in a bus, 6 persons can speak Bengali, 15 can speak hindi and 6 can speak Marathi. In that group, none can speak any other language. If 2 persons can speak 2 languages and 1 person can speak all the 3 languages, then how many persons are there in the group?
   A) 21 B) 22 C) 23 D) 24

2. What should come in place of question mark (?) in the following series:
   132, 156, ?, 210, 240, 272
   A) 196 B) 182 C) 199 D) 204

3. Statement: Many business offices are located in buildings having 2-8 floors. If a building has more than 3 floors, it has a lift.
   Conclusions :
   A) All floors may be reached by lifts
   B) Only floors above the third floor have lifts
   C) Seventh floors have lifts
   D) Second floors do not have lifts

4. In the following question, the symbols ®, *, =, @, Δ are used with the following meaning :
   P®Q means P is greater than Q
   P@Q means P is either greater than or equal to Q
   P=Q means P s equal to Q
   P*Q means P is either smaller or equal to Q
   PΔQ means P is smaller than Q
   Statement I: U®N, S@A, NΔD, A = U Conclusion I: NΔS, Conclusion II: U = D
   A) Conclusion I is correct but Conclusion II may not be correct
   B) Conclusion I is incorrect but Conclusion II is always correct
   C) Both the conclusions are always correct
   D) Both the conclusions may not be correct

5. How many pairs of letters are there in the word EXCLAMATION which have same number of letters between them as in the English alphabet?
   A) One B) Two C) Three D) More than Three

6. In a certain code language: '134' means 'good and tasty', '478' means 'see good pictures', '729' means 'pictures are faint'. Which of the following digit stands for 'see'?
   A) 9 B) 2 C) 1 D) 8

7. If ROSE is coded as 6821, CHAIR is coded as 73456, PREACH is coded as 961473, then what will be the code for SEARCH?
   A) 246173 B) 214673 C) 214763 D) 216473

8. A man is facing north-west. He turns 90^0 in the clockwise direction, then 180^0 in the anti-clockwise direction and then another 90^0 in the same direction. Which direction he is facing now?
   A) South B) South-west C) South-east D) East

9. In three coloured boxes- Red, Green and Blue, 108 balls are placed. There are twice as many balls in the blue box as there are in green and red boxes combined and twice as many in the red box as there are in the blue box. How many balls are there in the green box?
A) 18 B) 54 C) 36 D) 45

10. Three persons are standing in the queue. There are 5 persons between A and B, and 8 persons between B and C. If there are three persons ahead of C and 21 persons behind A, what could be the minimum number of persons in the queue?
A) 41 B) 40 C) 28 D) 27

11. The function $Y = AXe^{-X}$ is: [Given that A>0, and x∈ [0,2)
A) linear B) concave to X axis C) convex to Y axis D) none of the above

12. The distance from Suresh's house to town is 40 km. He drove to town at a speed of 40 km per hour and returned home at a speed of 80 km per hour. What was his average speed for the whole trip?
A) 56.56 B) 60 C) 53.3 D) none of the above

13. Given $f(x) = log\frac{1+x}{1-x}$ and $g(x)=\frac{3x+x^3}{1+3x^2}$ then $fog(x)$ equals
A) –f(x) B) 3f(x) C) $[f(x)]^3$ D) $[f(x)]^2$

14. The coefficient of x^3 in the infinite series expansion of $\frac{2}{(1-x)(2-x)}$, for $|x| < 1$, is
A) –1/16 B) 15/8 C) –1/8 D) 15/16

15. A student answers a multiple choice question with 5 alternatives, of which exactly one is correct. The probability that he knows the correct answer is p, $0 < p < 1$. If he does not know the correct answer, he randomly ticks one answer. Given that he has answered the question correctly, the probability that he did not tick the answer randomly, is
A) 3p / (4p + 3) B) 5p / (3p + 2) C) 5p / (4p +1) D) 4p / (3p + 1)

16. Compute $\lim_{x\to\infty}\left(\sqrt{ax+x^2}-x\right)$ for a fixed real number a
A) $\frac{a^2}{2}$ B) $\frac{a}{2}$ C) $\frac{a}{2}(a+2)$ D) None of the above

17. In a chess competition involving some men and women, every player needs to play exactly one game with every other player. It was found that in 45 games, both the players were women and in 190 games, both players were men. The number of games in which one person was a man and other person was a woman is
A) 40 B) 180 C) 200 D) 220

18. ln 1.6 is bounded by
A) (0.3, 0.4) B) (0.375, 0.6) C) (0.274, 0.5134) D) (0.173, 0.457)

19. What will be the sum :
2+5+7+11+12+17+17+23+.....upto 23 terms
A) 222 B) 398 C) 547 D) 739

20. A man is known to speak the truth three out of 4 times. He throws a die and reports that it is a four. The probability that it is actually a four is
A) 1/6 B) 3/4 C) 3/8 D) 3/24

21. What is the standard form of the complex numbers z_1^2/z_2, where $z_1 = -1+2i$ and $z_2 = 2-3i$

A) $\frac{1}{2}-\frac{13}{6}i$ B) $\frac{6}{13}-\frac{17}{13}i$ C) $\frac{13}{6}-\frac{17}{6}i$ D) $\frac{17}{13}-\frac{6}{13}i$

22. The solution for the equation $\frac{dx}{dt}-4x=0$ for which $x=2$ when $t=1$ is

A) $4e^{2(t-1)}$ B) $2e^{2(t-1)}$ C) $4e^{4(t-1)}$ D) $2e^{4(t-1)}$

23. What is the minimum value of the function $f(x) = x(x-1)(x-2)$ on the interval [0,3]

A) $-3/3\sqrt{3}$ B) $-4/2\sqrt{3}$ C) $-2/3\sqrt{3}$ D) $-4/3\sqrt{3}$

24. What is the value of $\int_{(1/2)-y}^{(1/2)+y} \frac{2x-1}{x(1-x)}dx$, for $0 < y < ½$

A) 0 B) 1 C) ½ D) 2

25. A 4 digit PIN is selected. What is the probability that there are no repeated digits?

A) 0.400 B) 0.600 C) 0.504 D) 0.510

JADAVPUR UNIVERSITY

TO BE FILLED BY THE CANDIDATE USING BLUE/BLACK BALL POINT PEN

ANSWER SHEET

DATE OF EXAMINATION

NAME (IN BLOCK LETTERS):

ROLL NUMBER

JUBAECO

CATEGORY

- GEN
- SC
- ST
- OBC-A
- OBC-B

PHYSICALLY DISABLED

- YES
- NO

QUESTION BOOKLET SERIES

- A
- B
- C
- D

DATE OF BIRTH

100059

FILLING INSTRUCTIONS

1. Use only Blue/Black Ball Point Pen for filling the circles.
2. Please do not make any stray/extraneous marks on the answer sheet. Rough work must not be done on the answer sheet.
3. Do not damage by erasing the sheet.
4. Mark should be dark and completely fill the circle.
5. Mark the marks only in the spaces provided. Please do not mark any stray marks on the answer sheet.
6. Darken only one circle for each question as shown in the example below. No marks will be awarded for multiple response/answer for single question.

EXAMPLE FOR SHADING			
Correct Shading	Ⓐ Ⓑ ● Ⓓ	Incorrect Shading	Ⓐ ⊗ ⊘ ◒

7. No candidate can leave the examination hall before completion of the examination.
8. Any mistake in darkening the Roll No. circles will lead to loss of identity of the candidate and merit position.

ANSWERS

1	Ⓐ	Ⓑ	Ⓒ	Ⓓ	6	Ⓐ	Ⓑ	Ⓒ	Ⓓ	11	Ⓐ	Ⓑ	Ⓒ	Ⓓ	16	Ⓐ	Ⓑ	Ⓒ	Ⓓ	21	Ⓐ	Ⓑ	Ⓒ	Ⓓ
2	Ⓐ	Ⓑ	Ⓒ	Ⓓ	7	Ⓐ	Ⓑ	Ⓒ	Ⓓ	12	Ⓐ	Ⓑ	Ⓒ	Ⓓ	17	Ⓐ	Ⓑ	Ⓒ	Ⓓ	22	Ⓐ	Ⓑ	Ⓒ	Ⓓ
3	Ⓐ	Ⓑ	Ⓒ	Ⓓ	8	Ⓐ	Ⓑ	Ⓒ	Ⓓ	13	Ⓐ	Ⓑ	Ⓒ	Ⓓ	18	Ⓐ	Ⓑ	Ⓒ	Ⓓ	23	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4	Ⓐ	Ⓑ	Ⓒ	Ⓓ	9	Ⓐ	Ⓑ	Ⓒ	Ⓓ	14	Ⓐ	Ⓑ	Ⓒ	Ⓓ	19	Ⓐ	Ⓑ	Ⓒ	Ⓓ	24	Ⓐ	Ⓑ	Ⓒ	Ⓓ
5	Ⓐ	Ⓑ	Ⓒ	Ⓓ	10	Ⓐ	Ⓑ	Ⓒ	Ⓓ	15	Ⓐ	Ⓑ	Ⓒ	Ⓓ	20	Ⓐ	Ⓑ	Ⓒ	Ⓓ	25	Ⓐ	Ⓑ	Ⓒ	Ⓓ