



SET-A

## QUANTUM POTENTIAL TEST

[Quality Nurturer & Mind Utilizer Test for Potential Enhancement]

(IPEC Scholarship-Cum-Admission Test)

For

CLASS-X

(For X to XI Moving Students)

Time : 2 Hrs.]

[14-Oct-2018]

[Maximum Marks : 150

[PAPER-1]

Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.

### INSTRUCTIONS

1. The booklet is your Question Paper. Do not break the seal of this booklet before being instructed to do so by the invigilator.
2. Blank spaces and blank pages are provided in the question paper for your rough work. No additional sheets will be provided for rough work.
3. Blank papers, clipboards, log tables, slide rules, calculators, cameras, cellular phones, pagers and electronic gadgets are **NOT** allowed inside the examination hall.
4. The answer sheet, a machine-readable Optical Response Sheet (**ORS**), is provided separately.
5. On breaking the seal of the booklet check that it contains **14** pages and all the **50** questions.
6. A candidate has to write his / her answers in the ORS sheet by darkening the appropriate bubble with the help of **Black ball point pen** as the correct answer of the question attempted.
7. **Question Paper Format :**  
This question paper consists of **Two Parts**:  
**Part-I: IQ** (Mental Ability) - 25 Questions.  
**Part-II:** (Mathematics) - 25 Questions.
8. **Marking Scheme :**  
All **Questions** carries **+3** marks for correct answer and **Zero** for wrong answer

FOR ANSWER KEY VISIT OUR WEBSITE- [www.ipeeciit.com](http://www.ipeeciit.com)

sample paper

PART -I [IQ]

[SINGLE CORRECTTYPE]

Each question has four choices (A), (B), (C) and (D) out of which only one is correct.

1.

CODE - I					
	0	1	2	3	4
0	G	V	E	A	C
1	R	O	N	G	L
2	M	N	E	L	I
3	O	T	I	T	A
4	N	L	N	E	P

CODE - II					
	5	6	7	8	9
5	R	E	O	N	G
6	N	P	V	E	L
7	M	T	I	O	N
8	E	A	I	C	O
9	N	T	A	R	L

From above Coding

T can be write 31, 76 and N can written 12 and 79 Similarly

NAME can be written

(A) 12, 24, 88, 43

(B) 21, 86, 75, 43

(C) 99, 68, 23, 67

(D) 65, 03, 20, 75

2.

There are four conditions are given



If 1 at the Top, Then at bottom

(A) 6

(B) 3

(C) 2

(D) 5

3.

If 25<sup>th</sup> Dec. 2016 was Sunday, Then 15<sup>th</sup> August 2017 will be

(A) Sunday

(B) Tuesday

(C) Monday

(D) Friday

4.

Total numbers of Triangle in given figure.

(A) 11

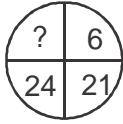
(B) 14

(C) 16

(D) More than 17

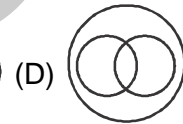
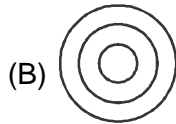
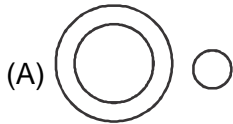


(Space for rough work)

5. Arrange in Accending order  
 (i) Diamond Anniversary (ii) Silver Anniversary  
 (iii) Golden Anniversary (iv) Platinum Anniversary  
 (A) (i), (ii), (iii), (iv) (B) (ii), (iii), (i), (iv) (C) (ii), (i), (iii), (iv) (D) (ii), (i), (iv), (iii)
6. 2, 6, 12, 20, 30, .....?.....56  
 (A) 36 (B) 46 (C) 56 (D) 42
7. 1, 4, 10, 19, 31, .....?  
 (A) 43 (B) 46 (C) 50 (D) 55
8. 2, 3, 6, 7, 14, 15, .....  
 (A) 16 (B) 30 (C) 31 (D) 32
9. Sita U sam's Sister, Mohan is san's father. Rohan is Rajan's father Rajan and Mohan are brother. So How Sita Related to Rohan?  
 (A) Daughter (B) Sister (C) Cousin (D) Wife
10. If GRAPE is coded as 27354 and FOUR is coded as 1687, then Group will be written  
 (A) 27384 (B) 27684 (C) 27685 (D) 27658
11. If + means  $\div$ ; - means  $\times$ ;  $\times$  means +;  $\div$  means -, then  $90 + 18 - 6 \times 30 \div 4 = ?$   
 (A) 64 (B) 48 (C) 56 (D) 36
12. PARALYSIS : NERVOUS SYSTEM :: MADNESS :  
 (A) EYES (B) MIND (C) FACE (D) BODY
13. R, Q, O, L, H, .....  
 (A) B (B) C (C) D (D) A
14. If  $3 \star 8 = 43$ ;  $7 \star 4 = 27$  then  $9 \star 6 = ?$   
 (A) 39 (B) 51 (C) 48 (D) 67
15.   
 (A) 84 (B) 34 (C) 48 (D) 58
16. Following equation will satisfied, if two sign interchanged  
 $10 + 10 \div 10 - 10 \times 10 = 10$   
 (A) + and - (B) + and  $\div$  (C) + and  $\times$  (D)  $\div$  and +
17. baa\_\_aaba\_\_  
 (A) a b (B) b a (C) d a (D) c a

(Space for rough work)

18. C 2 E, E 5 H, G 12 K, .....  
(A) I 58 K (B) J 58 Q (C) I 27 N (D) I 57 Q
19. BEH, DGJ, ? JMP  
(A) LKT (B) IMO (C) HGD (D) NQT
20. Teacher is related to class in same way Minister is related to  
(A) Pulpit (B) Parliament (C) Assembly (D) State
21. I am facing east, I turn  $100^\circ$  in the clockwise direction and then  $145^\circ$  in anticlockwise direction. Which direction am I facing now?  
(A) East (B) North-East (C) North (D) South-West
22. Suitable diagram for Criminal, Thief, Judge



Select Odd one

23. (A) Green (B) Violet (C) Red (D) Yellow
24. (A) Lake (B) River (C) Wind (D) Current
25. (A) Gallon (B) Ton (C) Quintal (D) Kilogram

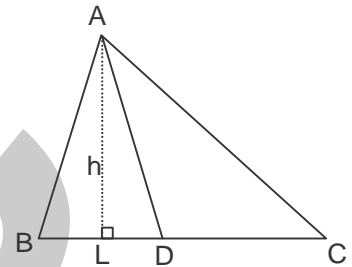
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## PART -II [Mathematics]

## [SINGLE CORRECTTYPE]

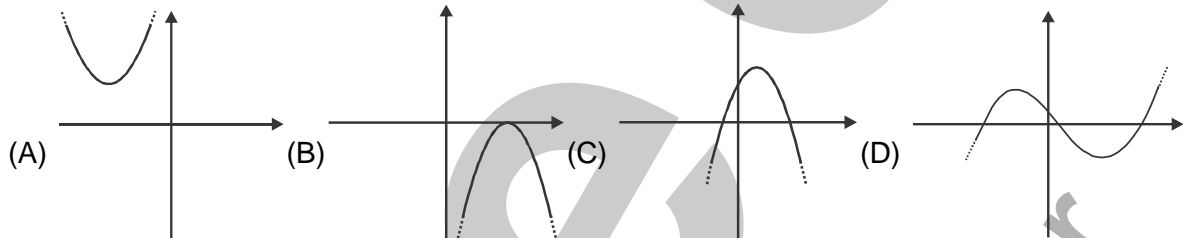
Each question has four choices (A), (B), (C) and (D) out of which only one is correct.

26. In  $\triangle ABC$ , if  $AD$  is the bisector of  $\angle A$  then  $\frac{ar(\triangle ABD)}{ar(\triangle ADC)} =$
- (A)  $\frac{BD}{DC}$  (B)  $\frac{AB}{AC}$   
 (C) both A & B (D) None
27. In  $\triangle ABC$ ,  $\cos\left(\frac{B+2C+3A}{2}\right) + \cos\left(\frac{A-B}{2}\right) =$
- (A) -1 (B) 0 (C) 1 (D) 2
28. Divide 62 into two parts such that fourth part of the first and two-fifth part of the second are in the ratio 2 : 3.
- (A) 24,38 (B) 32,30 (C) 16,46 (D) 40,22
29. If  $\theta$  lies in the first quadrant and  $5 \tan \theta = 4$ , then  $\frac{5 \sin \theta - 3 \cos \theta}{\sin \theta + 2 \cos \theta} =$
- (A) 5/14 (B) 3/14 (C) 1/14 (D) 0
30. If  $\sin \theta + \sin^2 \theta = 1$ , then  $\cos^2 \theta + \cos^4 \theta =$
- (A) 0 (B)  $\sqrt{2}$  (C) 1 (D) 2
31. For what values of  $a$  and  $b$  will the equations  $2x + 3y = 7$ ,  $(a-b)x + (a+b)y = (3a+b-2)$  represent coincident lines ?
- (A)  $a = -5, b = 1$  (B)  $a = 5, b = 1$  (C)  $a = -5, b = -1$  (D)  $a = 5, b = -1$
32. The product of two numbers is 12960 and their HCF is 36. How many pairs of such numbers can be formed ?
- (A) 2 (B) 3 (C) 4 (D) 5
33. When simple interest is charged, a certain principal amounts to Rs 7400 in 4 years and Rs 9200 in 7 years. Then the rate of interest is
- (A) 6% (B) 8% (C) 10% (D) 12%



(Space for rough work)

34. If  $\tan \theta = -4/3$  then  $\sin \theta =$   
 (A)  $-4/5$  but not  $4/5$  (B)  $-4/5$  or  $4/5$  (C)  $4/5$  but not  $-4/5$  (D) None
35.  $\triangle ABC \sim \triangle DEF$ ,  $AB : DE = 2 : 3$  and perimeter of  $\triangle ABC$  is 4cm, Then the perimeter of  $\triangle DEF$  is  
 (A) 16cm (B) 8cm (C) 6cm (D) 5cm
36. For what value of k, then system of equations  $x + 2y = 3, 5x + ky + 7 = 0$  has unique solution ?  
 (A)  $k = 10$  (B) All real values except 10  
 (C) All natural numbers except 10 (D) Does not exist
37. Which of the following is not the graph of a quadratic polynomial ?



38. The figure formed by successively joining the midpoints of a parallelogram is \_\_\_\_\_  
 (A) parallelogram (B) square (C) rhombus (D) rectangle
39. Construction of a cumulative frequency table is useful in determining the  
 (A) mean (B) median (C) mode (D) All three measures
40. When 10 is subtracted from each of the given observation, the mean is reduced by 60%. If 5 is added to all the given observation, the mean will be  
 (A) 25 (B) 30 (C) 60 (D) 65
41. If the zeroes of the quadratic polynomial  $ax^2 + bx + c, c \neq 0$  are equal, then  
 (A) c and a have opposite signs. (B) c and b have opposite signs.  
 (C) c and a have the same sign. (D) c and b have the same sign.
42. ABCD is a trapezium in which  $\overline{AB} \parallel \overline{CD}$ . P & Q are the mid points of  $\overline{AD}$  &  $\overline{BC}$ . If  $AB = 8\text{cm}$ ,  $PQ = 6\text{cm}$  then  $CD =$  \_\_\_\_\_  
 (A) 14cm (B) 7cm (C) 4cm (D) 2cm

(Space for rough work)

43. The polynomials  $ax^3 + 3x^2 - 3$  and  $2x^3 - 5x + a$  when divided by  $(x - 4)$  leaves remainders  $R_1$  and  $R_2$  respectively then value of  $a$  if  $2R_1 - R_2 = 0$ , is
- (A)  $-\frac{18}{127}$  (B)  $\frac{18}{127}$  (C)  $\frac{17}{127}$  (D)  $-\frac{17}{127}$
44. If  $x = \frac{1}{2 - \sqrt{3}}$  then the value of  $x^2 - \frac{1}{x^2}$  is
- (A)  $12\sqrt{3}$  (B)  $8\sqrt{3}$  (C) 14 (D) 12
45. If  $a = \sqrt{6 - \sqrt{11}}$  and  $b = \sqrt{6 + \sqrt{11}}$  then the value of  $(a + b)$  is :
- (A)  $\sqrt{22}$  (B)  $2\sqrt{11}$  (C)  $\sqrt{6}$  (D)  $\sqrt{12}$
46. The smallest rational number by which  $\frac{1}{3}$  should be multiplied so that its decimal expansion terminates after one place of decimal, is
- (A)  $\frac{3}{10}$  (B)  $\frac{1}{10}$  (C) 3 (D)  $\frac{3}{100}$
47. The zeroes of the quadratic polynomial  $x^2 + kx + k, k \neq 0$ ,
- (A) cannot both be positive. (B) cannot both be negative  
(C) are always unequal (D) are always equal
48. The median and mode of a frequency distribution are 525 and 500 then mean of same frequency distribution is –
- (A) 75 (B) 107.5 (C) 527.5 (D) 537.5
49. Number of zero's in the product of  $5 \times 10 \times 25 \times 40 \times 50 \times 55 \times 65 \times 125 \times 80$
- (A) 8 (B) 9 (C) 12 (D) 13
50. If the mean of the observations  $x, x + 3, x + 5, x + 7$  and  $x + 10$  is 9, the mean of the last three observations is
- (A)  $10\frac{1}{3}$  (B)  $10\frac{2}{3}$  (C)  $11\frac{1}{3}$  (D)  $11\frac{2}{3}$

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(Space for rough work)





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Time : 2 Hrs.]

[14-Oct-2018]

[Maximum Marks : 150

[PAPER-1]

### (SAMPLE PAPER) ANSWER KEY

- |         |         |         |         |         |
|---------|---------|---------|---------|---------|
| 1. (B)  | 2. (C)  | 3. (B)  | 4. (D)  | 5. (B)  |
| 6. (D)  | 7. (B)  | 8. (B)  | 9. (C)  | 10. (C) |
| 11. (C) | 12. (B) | 13. (B) | 14. (A) | 15. (A) |
| 16. (C) | 17. (B) | 18. (C) | 19. (D) | 20. (A) |
| 21. (B) | 22. (A) | 23. (B) | 24. (A) | 25. (A) |
| 26. (C) | 27. (B) | 28. (B) | 29. (A) | 30. (C) |
| 31. (B) | 32. (A) | 33. (D) | 34. (B) | 35. (C) |
| 36. (B) | 37. (D) | 38. (A) | 39. (B) | 40. (B) |
| 41. (C) | 42. (B) | 43. (B) | 44. (B) | 45. (A) |
| 46. (A) | 47. (A) | 48. (D) | 49. (B) | 50. (C) |