BIG BANG
EDGE TEST

SAMPLE PAPER
For Students presently in Class X

Paper 1 **Other Engineering Entrance Exam & JEE Main**

Duration : 75 minutes **Paper Code: 1011-1** *Maximum Marks : 156*

Please read the instructions and guidelines carefully :

Important Note : Please ensure to accurately input the details for the Question Paper Code as indicated at the top of this sheet (Side 2) into the corresponding columns / fields on the OMR sheet before proceeding with the paper. Incorrectly filled information regarding the class or paper may result in inaccurate outcomes or results.

"This paper has been scientifically designed to evaluate your potential – manifested and hidden for the target examinations mentioned in various sections of the paper. Thus, your adherence to the instructions is critical in the evaluation of the same"

1. This Question paper consists of 2 sections.
2. Student should devote allotted time for each section. If a section is easy, then it is easy for everyone & was meant to be like that with a goal in mind. Do not switch over to another section if you find the section to be easy. If a section is tough, then it is tough for everyone. You are advised to spend 30 Minutes on Section-I & 45 Minutes on Section-II. Dedicating the required time to finish each section successfully is essential. Opening the next section before completing the allotted time for the preceding section is not permitted. This adherence is crucial for assessing your true potential, as each section is meticulously crafted to evaluate your potential for the corresponding competitive examinations.
3. Candidate should open the seal of Section-II only after devoting 30 minutes on Section-I.
4. Sheets will be given to each candidate for rough work. Candidate must fill all details on the rough sheet and submit the same to invigilator along with OMR sheet. Candidate must mention the Question No. while doing the rough work in the sheet.
5. Please note candidates are not allowed to bring any prohibited items into the exam hall such as electronic devices, mobile phones, smart watch, earphones, calculators, books, notes, formula sheets, and bags.
6. Marking scheme is given in table below:

Section	Subject		Question no.	Marking Scheme for each question	
				Correct answer	Wrong answer
SECTION – I (Other Engineering Entrance Exam) Time Allotted: 30 Minutes	PHYSICS	(PART-A)	1 to 3	+4	–1
	CHEMISTRY	(PART-B)	4 to 6	+4	–1
	MATHEMATICS	(PART-C)	7 to 9	+4	–1
	PHYSICS	(PART-D)	10 to 11	+4	–1
	CHEMISTRY	(PART-E)	12 to 13	+4	–1
	MATHEMATICS	(PART-F)	14 to 15	+4	–1
SECTION – II (JEE Main) Time Allotted: 45 Minutes	PHYSICS	(PART-A)	16 to 19	+4	–1
	CHEMISTRY	(PART-B)	20 to 23	+4	–1
	MATHEMATICS	(PART-C)	24 to 27	+4	–1
	PHYSICS	(PART-D)	28 to 31	+4	–1
	CHEMISTRY	(PART-E)	32 to 35	+4	–1
	MATHEMATICS	(PART-F)	36 to 39	+4	–1

Section – I

Time: 30 Minutes

PHYSICS (PART – A)

*This part contains **3 Multiple Choice Questions** number **1 to 3.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

1. The effective resistance of the parallel combination is
   (A) Larger than the largest resistance (B) Larger than the smallest resistance
   (C) Smaller than the smallest resistance (D) None of these

2. The material which is/are used to make the protective handles of electric tools is/are.
   (A) Semi conductor (B) Conductor
   (C) Both (A) & (B) (D) Insulator

3. Ampere-second stands for the unit of
   (A) power (B) energy
   (C) emf (D) charge

CHEMISTRY (PART – B)

*This part contains **3 Multiple Choice Questions** number **4 to 6.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

4. Which of the following are made up of bases?
   (A) Antacid tablet (B) Soap
   (C) Toothpaste (D) All of these

5. Which of the following is a strong acid?
   (A) H_2CO_3 (B) CH_3COOH
   (C) HCl (D) HCOOH

6. Which of the following reactions involves the combination of two elements?
   (A) $CaO + CO_2 \rightarrow CaCO_3$ (B) $4Na + O_2 \rightarrow 2Na_2O$
   (C) $SO_2 + \frac{1}{2}O_2 \rightarrow SO_3$ (D) $NH_3 + HCl \rightarrow NH_4Cl$

MATHEMATICS (PART – C)

*This part contains **3 Multiple Choice Questions** number **7 to 9.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

7. The value of k for which the system of equations
   $2x + 3y = 5$
   $4x + ky = 10$
   has infinite number of solutions, is
   (A) 1 (B) 3
   (C) 6 (D) 0

8. The area of the triangle formed by the lines y = x, x = 6 and y = 0 is
(A) 36 sq.units (B) 18 sq.units
(C) 9 sq.units (D) 72 sq.units

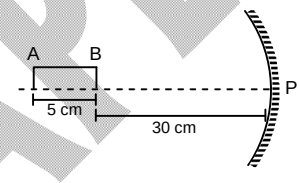
9. In a $\Delta ABC, AD$ is the bisector of $\angle BAC$, If AB = 6 cm , AC = 5 cm and BD = 3 cm, then DC =
(A) 11.3 cm (B) 2.5 cm
(C) 3.5 cm (D) None of these

PHYSICS (PART – D)

*This part contains **ONE (01)** comprehension. Based on comprehension, there are **TWO (02)** questions of **Multiple Choice Questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

Comprehension for Q. No. 10 to 11

A thin rod of length 5 cm lies along the principal axis of the concave mirror of focal length 15 cm in such a way that the end closer to the pole is 30 cm away from it (as shown in figure)



10. Find the distance of image of 'A' from pole 'P'.
(A) 20.25 (B) 22.5
(C) 35 (D) 26.25

11. Find the distance of image of 'B' from pole 'P'.
(A) 20 cm (B) 30 cm
(C) 15 cm (D) 10 cm

CHEMISTRY (PART – E)

*This part contains **ONE (01)** comprehension. Based on comprehension, there are **TWO (02)** questions of **Multiple Choice Questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

Comprehension for Q. No. 12 to 13

When the metal carbonates and hydrogen carbonates react with the acids, they produce salt and water and liberate the carbon dioxide gas.

Metal carbonates + Acid $\rightarrow$ salt + carbon dioxide + water

12. A solution reacts with crushed egg-shells to give a gas that turns lime-water milky. The solution contains:
(A) NaCl (B) HCl
(C) LiCl (D) KCl

13. A student dropped few pieces of marbles in acetic acid contained in a test tube. The evolved gas was then passed through lime water in excess, then what will you observe
(A) Lime water become milk (B) Milkyness will disappear
(C) No change (D) None of these

MATHEMATICS (PART – F)

*This part contains **ONE (01)** comprehension. Based on comprehension, there are **TWO (02)** questions of **Multiple Choice Questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

Comprehension for Q. No. 14 to 15

$(-5,-10)$, $(-15,15)$, $(5,5)$ are the coordinates of vertices A, B and C respectively of ΔABC, and P is a point on median AD such that $AP:PD=2:3$

14. The coordinates of point D is

(A) $(5,10)$ (B) $(-5,-10)$

(C) $(5,-10)$ (D) $(-5,10)$

15. The coordinates of point P is

(A) $(-5,-2)$ (B) $\left(\frac{10}{3},5\right)$

(C) $\left(\frac{10}{3},\frac{5}{3}\right)$ (D) None of these

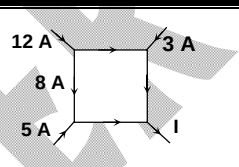
Section – II

Time: 45 Minutes

PHYSICS (PART – A)

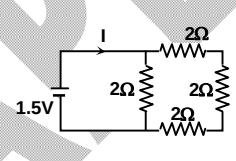
*This part contains **4 Multiple Choice Questions** number **16 to 19.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

16. Figure shows a network of currents. The magnitude of currents is shown here. The current I will be



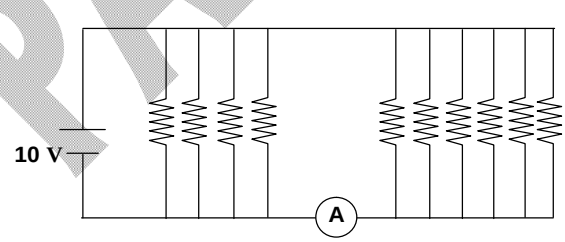
(A) –3A (B) 3A
(C) 13 A (D) 20 A

17. The value of I will be :



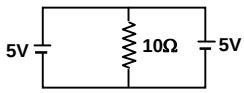
(A) 1 amp (B) 2 amp
(C) 3 amp (D) 4 amp

18. In the given figure if each resistance is of 10 Ω then reading of the ammeter is



(A) 1 A
(B) 4 A
(C) 3 A
(D) 6 A

19. Find the current in the resistance 10 Ω.



(A) 2 A (B) 0.5 A
(C) 1 A (D) 1.5 A

CHEMISTRY (PART – B)

*This part contains **4 Multiple Choice Questions** number **20 to 23.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

20. $Fe_2O_3 + 2Al \rightarrow Al_2O_3 + 2Fe$

The above reaction is an example of a
(A) Combination reaction (B) Double displacement reaction
(C) Decomposition reaction (D) Displacement reaction

21. Which of the following is not a property of mercury?
(A) Lustre (B) Malleability
(C) Ductility (D) Both (B) & (C)

22. Which of the following is second most abundant in the earth's crust?
(A) Cu (B) Zn
(C) Al (D) Fe

23. Washing soda ($Na_2CO_3.10H_2O$) on exposure to air gives
(A) $Na_2CO_3.9H_2O$ (B) $Na_2CO_3.7H_2O$
(C) $Na_2CO_3.5H_2O$ (D) $Na_2CO_3.H_2O$

MATHEMATICS (PART – C)

*This part contains **4 Multiple Choice Questions** number **24 to 27.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

24. If $x\sin(90^\circ-\theta)\cot(90^\circ-\theta)=\cos(90^\circ-\theta)$, then x =

(A) 0 (B) 1
(C) -1 (D) 2

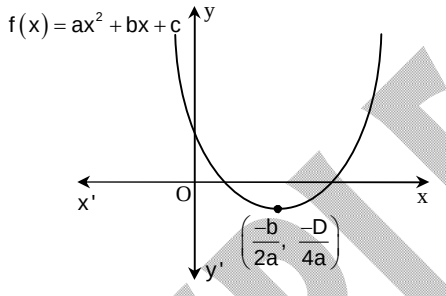
25. $\tan5^\circ\times\tan30^\circ\times4\tan85^\circ$ is equal to

(A) $\frac{4}{\sqrt{3}}$ (B) $4\sqrt{3}$
(C) 1 (D) 4

26. If one zero of the polynomial $f(x)=(k^2+4)x^2+13x+4k$ is reciprocal of the other, then k is equal to-

(A) 2 (B) -2
(C) 1 (D) -1

27. If the given diagram shows the graph of the polynomial $f(x)=ax^2+bx+c$, then



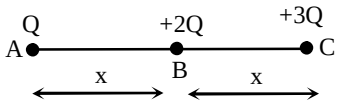
(A) $a>0,b<0$ and $c>0$ (B) $a>0,b>0$ and $c<0$
(C) $a>0,b>0$ and $c>0$ (D) $a<0,b>0$ and $c<0$

PHYSICS (PART – D)

*This part contains **TWO (02)** comprehensions**.** Based on each comprehension, there are **TWO (02)** questions of **Multiple Choice Questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

Comprehension for Q. No. 28 to 29

The charges of value Q, +2Q, +3Q are placed at point A, B, and C respectively.



28. Find the force on charge A:

(A) $\frac{9}{4}\frac{KQ^2}{x^2}$ (B) $\frac{10}{4}\frac{KQ^2}{x^2}$
(C) $\frac{11}{4}\frac{KQ^2}{x^2}$ (D) $\frac{13}{4}\frac{KQ^2}{x^2}$

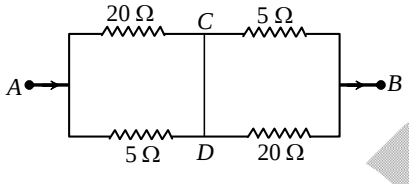
29. Find the force on charge B:

(A) $5\frac{KQ^2}{x^2}$ (B) $6\frac{KQ^2}{x^2}$

(C) $7\frac{KQ^2}{x^2}$ (D) $4\frac{KQ^2}{x^2}$

Comprehension for Q. No. 30 to 31

When some potential difference is maintained between *A* and *B*, current *I* enters the network at *A* and leaves at *B*.



30. Same potential points

(A) C & D (B) C & B

(C) C & A (D) A & B

31. Current $\frac{3I}{5}$ flows from

(A) C to D (B) D to C

(C) A to C (D) None of these

CHEMISTRY (PART – E)

*This part contains **TWO (02)** comprehensions. Based on each comprehension, there are **TWO (02)** questions of **Multiple Choice Questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

Comprehension for Q. No. 32 to 33

According to Lewis theory of acids and bases, 'an acid is a substance which can accept electron pairs and a base is a substance which can donate electron pairs'. This theory is called electronic theory because it deals only with the electron pairs and say nothing about the hydronium and hydroxide ions. Generally, cations or molecules having no lone pair of electrons acts as Lewis acid and anions or molecules with lone pair of electrons act as Lewis bases.

32. Which among the following will act as a Lewis acid?

(A) NH_3 (B) BF_3

(C) OH^- (D) Both (B) & (C)

33. According to Lewis acid theory, a base is…..

(A) electron pair acceptor (B) hydroxide releasing

(C) electron pair donor (D) proton releasing

Comprehension for Q. No. 34 to 35

In terms of electronic concept, reductants are electron donors while oxidants are electron acceptors. Oxidants also involve decrease in the oxidation number of one of its atoms/ions while reductants involve increase in the oxidation number of one of its atoms/ions. Oxidation number are always and must be always calculated on the basis of their structures and never from their molecular formulae.
Redox reactions can be balanced both by oxidation number method as well as ion-electron method.

34. In the reaction

$3Br_2 + 6CO_3^{2-} + 3H_2O \longrightarrow 5Br^- + BrO_3^- + 6HCO_3^-$

(A) Bromine is oxidised and carbonate is reduced
(B) Bromine is reduced and water is oxidised
(C) Bromine is neither reduced nor oxidised
(D) Bromine is both reduced and oxidised

35. The following reaction is used for the preparation of oxygen gas in the laboratory:

$2KClO_3(s) \xrightarrow{\Delta} 2KCl(s) + 3O_2(g)$

Which of the following statement about the reaction is correct?
(A) It is a decomposition reaction and endothermic in nature
(B) It is a combination reaction
(C) It is a decomposition reaction & accompanied by release of heat
(D) It is a photochemical decomposition reaction & exothermic in nature

MATHEMATICS (PART – F)

*This part contains **TWO (02)** comprehensions. Based on each comprehension, there are **TWO (02)** questions of **Multiple Choice Questions**. Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

Comprehension for Q. No. 36 to 37

$f(x) = a_0 + a_1 x + a_2x^2 + \ldots\ldots + a_n x^n$ is divided by $(x-k)$, then remainder is $f(k)$.

36. The remainder when x^{2014} is divided by $x^2 - 1$
(A) 1 (B) -1
(C) $x + 1$ (D) $x-1$

37. The remainder when x^{2014} is divided by x^2-3x+2 is
(A) 2014 (B) $2014x-2013$
(C) $(2^{2014}-2)x+(2-2^{2014})$ (D) $(2^{2014}-1)x+(2-2^{2014})$

Comprehension for Q. No. 38 to 39

If α, β, γ are the zeroes of $ax^3 + bx^2 + cx + d$, then

$$\sum \alpha = -\frac{b}{a}, \sum \alpha\beta = \frac{c}{a}, \alpha\beta\gamma = -\frac{d}{a}$$

38. If α, β, γ are the zeroes of $x^3 - 5x^2 - 2x + 24$ and $\alpha\beta = 12$ then $\gamma =$
(A) 2 (B) – 2
(C) 3 (D) –3

39. If α, β, γ are zeroes of $x^3 - 5x^2 - 16x + 80$ the sum of zeroes are :
(A) 3 (B) 4
(C) 5 (D) 2

BIG BANG EDGE TEST

SAMPLE PAPER

For Students presently in Class X

Paper 1 Other Engineering Entrance Exam & JEE Main

Paper Code: 1011-1

ANSWER KEYS

1.	**C**	2.	**D**	3.	**D**	4.	**D**
5.	**C**	6.	**B**	7.	**C**	8.	**B**
9.	**B**	10.	**D**	11.	**B**	12.	**B**
13.	**B**	14.	**D**	15.	**A**	16.	**D**
17.	**A**	18.	**D**	19.	**B**	20.	**D**
21.	**D**	22.	**C**	23.	**D**	24.	**B**
25.	**A**	26.	**A**	27.	**A**	28.	**C**
29.	**D**	30.	**A**	31.	**B**	32.	**B**
33.	**C**	34.	**D**	35.	**A**	36.	**A**
37.	**D**	38.	**B**	39.	**C**		