BIG BANG
EDGE TEST

SAMPLE PAPER
For Students presently in Class IX

Paper 2

JEE Advanced

Paper Code: 910-2

Duration : 105 minutes *Maximum Marks : 135*

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 45 Minutes on Section-I and 60 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 45 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 (JEE Advanced) Time Allotted: 45 Minutes	Higher Order Thinking Skills (IQ)		1 to 22	+3	–1
SECTION – II (JEE Advanced) Time Allotted: 60 Minutes	PHYSICS	(PART-A)	23 to 25	+3	–1
	CHEMISTRY	(PART-B)	26 to 28	+3	–1
	MATHEMATICS	(PART-C)	29 to 31	+3	–1
	PHYSICS	(PART-D)	32 to 33	+4 *Partial Marking	–2
	CHEMISTRY	(PART-E)	34 to 35	+4 *Partial Marking	–2
	MATHEMATICS	(PART-F)	36 to 37	+4 *Partial Marking	–2
	PHYSICS	(PART- G)	38 to 39	+3	–1
	CHEMISTRY	(PART- H)	40 to 41	+3	–1
	MATHEMATICS	(PART- I)	42 to 43	+3	–1

*** Partial Marking: (Q. No. 32 to 37):**

Full Marks	**: +4**	If only (all) the correct option(s) is(are) chosen;
Partial Marks	**: +3**	If all the four options are correct but ONLY three options are chosen;
Partial Marks	**: +2**	If three or more options are correct but ONLY two options are chosen, both of which are correct;
Partial Marks	**: +1**	If two or more options are correct but ONLY one option is chosen and it is a correct option;
Zero Marks	**: 0**	If none of the options is chosen (i.e. the question is unanswered)
Negative Marks	**: -2**	In all other cases.

Section – I

Time: 45 Minutes

HIGHER ORDER THINKING SKILLS (IQ)

*This part contains **13 Multiple Choice Questions** number **1 to 13.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

1. In a certain code language, if each letters in the English alphabet, with an odd numbered value is given a code of 2, and each of the remaining letters is coded as 1, what is the code for SALVATION?
   (A) 221121221 (B) 211121212
   (C) 211221121 (D) 221112122

2. Each question below has two statements followed by three conclusions (i), (ii) and (iii). Read the statements carefully and identify how many of the given conclusions logically follow and mark your answer as
   Statements:
   All gods are great.
   Some greats are brave.
   Conclusions:
   (i) Some gods are not brave.
   (ii) Some gods are brave.
   (iii) Some brave are not gods.
   (A) None of the given conclusions follows. (B) Only one conclusion follows.
   (C) Only two conclusions follow. (D) All three conclusions follow.

3. Select the correct alternative from the given choices.
   12 : 1728 : : 8 : _____
   (A) 64 (B) 256
   (C) 512 (D) 1024

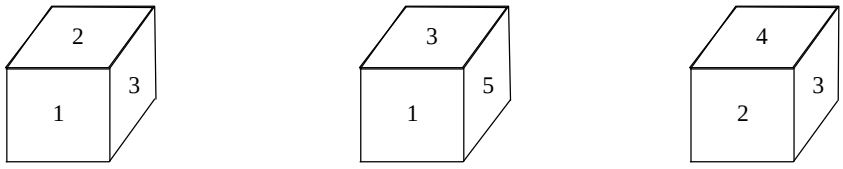
4. A clock strikes once at 1 o' clock, twice at 2 o' clock, three times at 3 o' clock and so on. If it takes 10 seconds to strike at 6 o' clock, find the time taken by it to strike at 12 o' clock.
   (A) 18 seconds (B) 22 seconds
   (C) 24 seconds (D) 26 seconds

5. If in a certain code language, 'BROWSER' is written as 'RESWORB', then how 'TEACHER' be coded in that same language?
   (A) REHCEAT (B) REHCAET
   (C) REHCTEA (D) AHRCTEA

6. Complete the following series.
   BC25, CE64, EG144, GK324, ___
   (A) HO529 (B) KM729
   (C) HI289 (D) KM576

7. Complete the following series.
   150, 392, 810, 1452, 2366, ___
   (A) 3375 (B) 3600
   (C) 2800 (D) 3000

8.



(i) (ii) (iii)

What would be the number opposite 3?

(A) 1 (B) 6
(C) 5 (D) 4

9. Arrange the given words in the sequence in which they occur in the dictionary and, then choose the correct sequence

1. Page 2. Pagan 3. Palisade 4. Pageant 5. Palate

(A) 1, 4, 2, 3, 5 (B) 2, 4, 1, 3, 5
(C) 2, 1, 4, 5, 3 (D) 1, 4, 2, 5, 3

10. Arrange the given words in the sequence in which they occur in the dictionary and, then choose the correct sequence

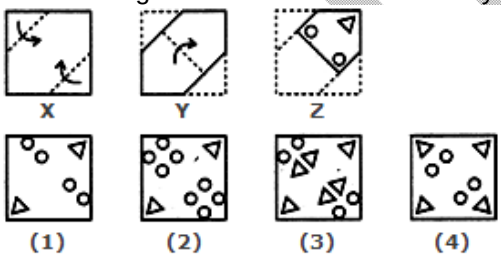
1. Select 2.Seldom 3. Send 4. Selfish 5.Seller

(A) 1, 2, 4, 5, 3 (B) 2, 1, 5, 4, 3
(C) 2, 1, 4, 5, 3 (D) 2, 5, 3, 1, 4

11. In a certain code language if RAIN is coded as abcd, GAIN is coded as bcde and PAIN is coded as bcdf, then what is the code for word GRAIN?

(A) abcde (B) bcdef
(C) acdfe (D) abcfe

12. Choose a figure which would most closely resemble the unfolded form of Figure (Z).



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

13. Select a suitable figure from the Answer Figures that would replace the question mark (?).

Problem Figures: Answer Figures:

(A) (B) (C) (D) (1) (2) (3) (4) (5)

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

*This part contains **THREE (03)** comprehensions. Based on each comprehension, there are **THREE (03)** 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 16

Study the information given below and answer the questions that follow:

There is a family of six persons A, B, C, D, E and F. They are Lawyer, Doctor, Teacher, Salesman, Engineer and Accountant. There are two married couples in the family. D, the salesman is married to the Lady Teacher. The Doctor is married to the Lawyer. F, the Accountant is the son of B and brother of E. C, the lawyer is the daughter – in – law of A. E is the unmarried Engineer. A is the grandmother of F.

14. How is E related to F?
(A) Brother (B) Sister
(C) Cousin (D) None of these

15. What is the profession of B?
(A) Teacher (B) Doctor
(C) Lawyer (D) None of these

16. What is the profession of A?
(A) Lawyer (B) Teacher
(C) Doctor (D) Accountant

Comprehension for Q. No. 17 to 19

A block is painted Red on all the six faces. The side of this block is 5 cm. It is cut into smaller cubes of side 1 cm. Answer the following questions based on this statement.

17. How many cubes have three faces coloured?
(A) 10 (B) 8
(C) 6 (D) 5

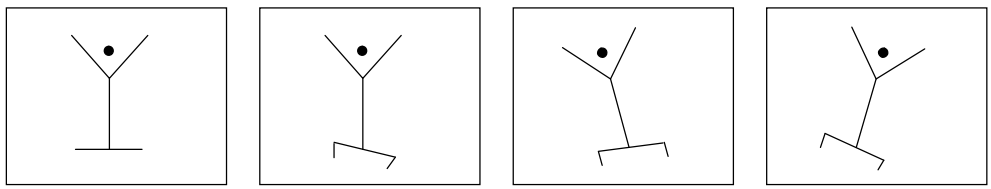
18. How many cubes have two faces coloured?
(A) 36 (B) 30
(C) 28 (D) 22

19. How many cubes have only one faces coloured?
(A) 10 (B) 18
(C) 36 (D) 54

Comprehension for Q. No. 20 to 22

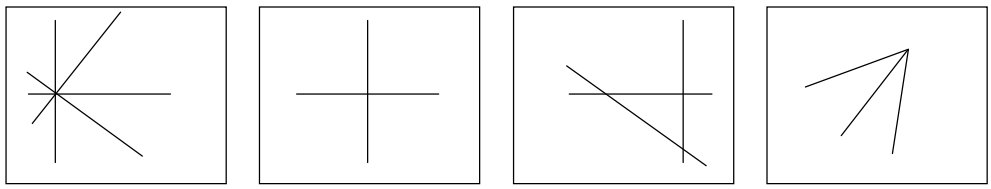
Out of the four figures marked (A), (B), (C) and (D) three are similar in a certain manner. However, one figure is not like the other four. Choose the figure which is different from the rest.

20.



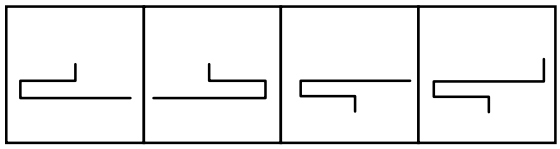
(A) (B) (C) (D)

21.



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

22.



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

Section – II

Time: 60 Minutes

PHYSICS (PART – A)

*This part contains **3 Multiple Choice Questions** number **23 to 25.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

23. For a freely falling body
(A) velocity remains constant
(B) acceleration remains constant
(C) body acceleration and velocity remains constant
(D) both acceleration and velocity changes

24. A ball is thrown vertically upwards. It rises to a height of 50 m and comes back to the thrower,
(A) the total distance covered by the ball is zero
(B) the net displacement of the ball is zero
(C) the displacement is 100 m
(D) none of these

25. A body begins to slide over the surface of another, when pulled with a force of 10 N. If we pull with a force of 5N, the force of friction that will come into play is
(A) zero (B) 0.5 N
(C) 5 N (D) 50 N

CHEMISTRY (PART – B)

*This part contains **3 Multiple Choice Questions** number **26 to 28.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

26. Which of the following has no fluidity?
(A) Nitrogen (B) Alcohol
(C) Common salt (D) Helium

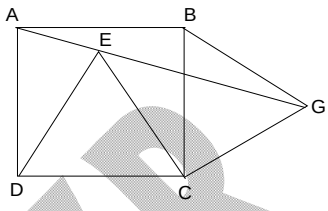
27. In washing machines, wet clothes are dried by using the process of:
(A) Filtration (B) Sedimentation
(C) Evaporation (D) Centrifugation

28. 40 g of common salt is dissolved in 320 g of water. The mass percentage of salt is.
(A) 11.1% (B) 12.5%
(C) 15 % (D) 10%

MATHEMATICS (PART – C)

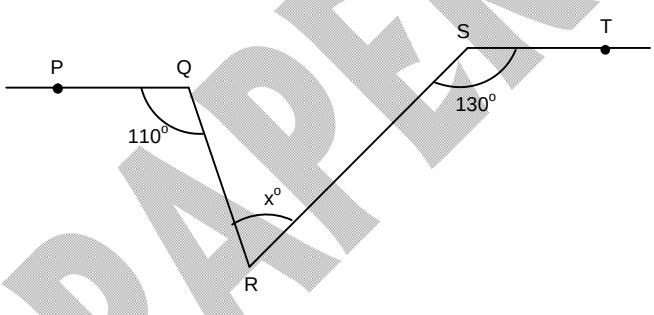
*This part contains **3 Multiple Choice Questions** number **29 to 31.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONLY ONE** is correct.*

29. ABCD is a square, ΔDEC and ΔBCG are equilateral. Find reflex of ΔGEC.



(A) 45^0 (B) 315°
(C) 60^0 (D) 300^0

30. If $PQ \parallel ST$, then x = ?



(A) 30^0
(B) 45^0
(C) 60^0
(D) 90^0

31. In an isosceles triangle ABC, $\angle B = 90^o$. D is a point on AC such that BD $\perp$ AC. Then BD is equal to

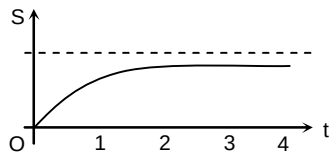
(A) $\frac{AB}{2}$ (B) $\frac{BC}{2}$
(C) $\frac{AC}{2}$ (D) none of these

PHYSICS (PART – D)

*This part contains **2 Multiple Choice Multi Correct Type Questions** number **32 to 33.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONE OR MORE THAN ONE** is/are correct.*

32. On which of the following no net force is acting?
(A) a drop of rain falling down with constant velocity.
(B) a cork of mass 10 g floating in water.
(C) a car moving with a constant velocity of 30 km h^{-1} on a rough road.
(D) a kite skillfully held stationary in the sky

33. The displacement of particle as a function of time in shown in the figure. It indicates



(A) The particle starts with a certain velocity, but the motion is retarded and finally the particle stops
(B) The velocity of the particle decreases.
(C) The acceleration of the particle is in opposite direction to the velocity
(D) The particle starts with a constant velocity, the motion is accelerated and finally the particle moves with another constant velocity

CHEMISTRY (PART – E)

*This part contains **2 Multiple Choice Multi Correct Type Questions** number **34 to 35.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONE OR MORE THAN ONE** is/are correct.*

34. The alloys that are made from copper are
(A) steel (B) gold
(C) bronze (D) brass

35. Corrosion can be prevented by
(A) painting (B) greasing
(C) metal coating (D) none of these

MATHEMATICS (PART – F)

*This part contains **2 Multiple Choice Multi Correct Type Questions** number **36 to 37.** Each question has 4 choices (A), (B), (C) and (D), out of which **ONE OR MORE THAN ONE** is/are correct.*

36. In an equilateral triangle ABC, the side BC is trisected at D and E. Find the value of AD^2;
(A) $\frac{9}{7}AB^2$ (B) $\frac{7}{9}AB^2$
(C) $\frac{3}{4}AB^2$ (D) $\frac{4}{5}AB^2$

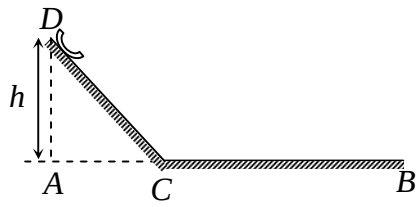
37. From which of the following triplet we can form a triangle
(A) $\{2,2,4\}$ (B) $\{2,2,3\}$
(C) $\{2,5,8\}$ (D) $\{9,10,11\}$

PHYSICS (PART – G)

*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. 38 to 39

A sledge of mass *m* slides down from point *D* on an icy hill of height *h* (as shown) and stops after covering a distance *CB*. The distance *AB* is equal to *s*. The co-efficient of friction between all the contact surfaces is same.



38. The co-efficient of friction between sledge and the icy surface is
(A) $\frac{2h}{3s}$ (B) $\frac{h}{s}$
(C) $\frac{s}{2h}$ (D) $\frac{s}{3h}$

39. The work done by friction till the sledge reaches point *B* is

(A) *–mgh* (B) $-mg\sqrt{h^2+s^2}$

(C) $-mg(s-h)$ (D) $-mg(s+h)$

CHEMISTRY (PART – H)

*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. 40 to 41

An ice cube at -20°C was put to heat. During this experiment the thermometer stops reading for some time after it starts reading again and again after some time it stops finally though the heat supply was continuous till end

40. What could be the possible reason when thermometer stops reading first time?
(A) Mercury inside the thermometer go freeze
(B) Heat supplied was changing into potential energy completely
(C) Possibly Thermometer lost contact with ice
(D) Can't say anything.

41. If 40 g of ice was taken then what amount of heat have been absorbed by ice on reaching the temperature of -5°C. (Specific heat ice = 0.5 cal/g°C)
(A) 300 cal (B) 100 cal
(C) 200 cal (D) 600 cal

MATHEMATICS (PART – I)

*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. 42 to 43

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

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

43. 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) $(2^{2014} - 1)x + (2 - 2^{2014})$

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SAMPLE PAPER

For Students presently in Class IX

Paper 2

JEE Advanced

Paper Code: 910-2

ANSWER KEYS

1.	**A**	2.	**A**	3.	**C**	4.	**B**
5.	**B**	6.	**D**	7.	**B**	8.	**B**
9.	**C**	10.	**C**	11.	**A**	12.	**B**
13.	**A**	14.	**D**	15.	**B**	16.	**B**
17.	**B**	18.	**A**	19.	**D**	20.	**A**
21.	**C**	22.	**D**	23.	**B**	24.	**B**
25.	**C**	26.	**C**	27.	**D**	28.	**A**
29.	**B**	30.	**C**	31.	**C**	32.	**A, B, C, D**
33.	**A, B, C**	34.	**C, D**	35.	**A, B, C**	36.	**B**
37.	**B, D**	38.	**B**	39.	**A**	40.	**B**
41.	**B**	42.	**A**	43.	**D**		