



#### **Instructions :**

- 1) Paper contains four sections (I) Physics (II) Chemistry (III) Maths (IV) Biology.
- 2) Total number of questions 70. (Physics-15, Chemistry-15, Maths-25, Biology-15)
- 3) Single correct option type : out of four options given, only one option will be correct.
- 4) All questions are compulsory.
- 5) Each question carry +3 marks for correct option marked and -1, if incorrect option is marked. Zero mark if not attempted.
- 6) Use black / blue ball pen for filling OMR.
- 7) You must fill your enrollment number in the given appropriate box in the OMR.



### JEE 2023 RESULTS @ NASHIK



**Computer Science(Dual)** 



KAUSHAL MORANKAR IIT - Hydrabad Computer Science(B.Tech)



ASHISH MORE IIT - GUWAHATI Energy Engineering



NEEL KOTKAR IIT - KHARAGPUR Applied Geology 4 Yrs. B.Sc.



VIVEKANAND SAHOO NIT - TRICHY Electrical & Electronic



ABHISHEK KUMBHAR NIT - AGARTALA Computer Science



TANISHA HASE IIT - BOMBAY Electrical Engineering(Dual)



RUSHAD TIDAKE IIT - Delhi Production & Industrial Eng.



SHANESHRAJE KADU IIT - BHU (VARANASI) Industrial Chemistry



ATHARVA DUBE NIT - TRICHY Instrumentation Engineering



NITIN SHEWALE IIIT- BHOPAL Information Technology



#### ARYA JUSHI IIT-BOMBAY

**Engineering Physics** 



OJAS PATHAK IIT - BOMBAY Chemical Engineering (B.Tech)



OM DEORE IIT - ROORKEE Geophysical Technology



PAWAN BHATKAR IIT - DHANBAD Mathematic & Computing



**GOVINDA SONAWANE NIT - KURUKSHETRA** Electronics & Communication



VEDANT SALVE NIT - JALANDHAR Data Science & Engineering



SHIVAM SHANKAR IIT - BOMBAY Engineering Physics



AYUSH PAWAR IIT - BOMBAY BS Maths



PRITI BAGUL IIT - DHANBAD Petroleum Engineering



YASH GOHIL NIT - SURAT Electrical Engineering



YASH DAWANGE NIT - NAGPUR Metallurgical Engineering







6. In the following diagrams O is point object and I is its image formed by a concave mirror. Indentify the diagram in which position of image I is nearly correct.





Reg. &Corp Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) – 324005

Website:www.resonance.ac.in | E-mail:contact@resonance.ac.in

**13.** In the circuit shown three resistor are connected as shown. The switch S is open and a cell is connected between A and B has emf 30 volt. Find current supplied by cell



(D) 1A

14. For the circuit shown in fig. Current supplied by cell is I

(A) 2 A



Choose **incorrect** statement from the following (A) I = 4 A (B) Current in 3  $\Omega$  and 6  $\Omega$  will be same

- (C) Power developed in 4  $\Omega$  is four times to that of 2  $\Omega$
- (D) Power developed in 1  $\Omega$  resistor is 4 watt
- **15.** Light travels from medium X to medium Y as shown in the adjacent figure.



- (A) both the speed and frequency decrease
- (B) speed increases and frequency decreases

Educating for better tomorrow

- (C) the speed decreases and wavelength decrease
- (D) the speed decreases and wavelength increases



Website:<u>www.resonance.ac.in</u> | E-mail:<u>contact@resonance.ac.in</u>

[	Section-II (Chemistry)			
16.	How many different compounds can have the chemical formula,C3H4 ?(A) One(B) Two(C) Three	(D) Four		
17.	The electronegativity of the following elements increases in the order of _(A) S <p<n<o< td="">(B)P<s<n<o< td="">(C) N<o<p<s< td=""></o<p<s<></s<n<o<></p<n<o<>	(D) N <p<s<o< th=""></p<s<o<>		
18.	Arya Joshi, needs 1.71 g of cane sugar ( $C_{12}H_{22}O_{11}$ ) to sweeten his tea. What would be the number of carbon			
	atoms consumed through sugar in tea ? (A) $7.2 \times 10^{22}$ (B) $3.66 \times 10^{22}$ (C) $5 \times 10^{21}$	(D) $6.6 \times 10^{22}$		
19.	19. When the gases sulfur dioxide and hydrogen sulphide react, the reaction is $SO_2 + 2H_2S \rightarrow 2H_2O$ .			
	Here hydrogen sulphide is acting as(A) An oxidizing agent(B) A reducing agent(C) A dehydrating agent	(D) A catalyst		
20.	A sudden large jump between the values of second and third ionization energies of	an element would be		
	(A) $1s^2 2s^2 2p^6 3s^1$ (B) $1s^2 2s^2 2p^6 3s^2 3p^1$ (C) $1s^2 2s^2 2p^6 3s^2 3p^2$	(D) $1s^2 2s^2 2p^6 3s^2$		
21.	Which of the following are isoelectronic species ? (A) $Ca^{+2}$ , K (B) $Mg^{+2}$ , $Ca^{+2}$ (C) $K^{+1}$ , $S^{-2}$	(D) Cl <sup>-1</sup> , Na <sup>+1</sup>		
22.	Choose the correct set of oxides which represent the oxides as acidic : basic : neutrrespectively $1.CO_2 : NO_2 : N_2O : BeO$ $2.SO_2 : NO : CO : Al_2O_3$ $3.P_2O_5 : ZnO : NO : Al_2O_3$ $4.SO_3 : CaO : N_2O : PbO$ (A) 2(B) 3(C) 1(D) 4	al : amphoteric		
23.	What is the IUPAC name of the following organic compound ?HC=C-CHBr-CH=CH2(A) 3-Bromo pent-4-en-1-yne(B) 3-Bromo butenyne(C) 3-Bromo pent-1-en-4-yne(D) 3 Bromopentenynyl			
24.	Sum of oxidation states of all the carbon atoms in toluene molecule is (A) -1 (B) -7 /8 (C) -8/7 (D) -8			
25.	How many unpaired electrons are present in Ni <sup>+2</sup> ? (A) 0 (B) 8 (C) 2 (D) 4			
26	The pH of a solution containing 0.1 N NaOH solution is- (A) 12.02 (B) $10^{-1}$ (C) 13 (D) $10^{-10}$			
27.	In which of the following arrangements , the order is not according to the property indicated against it ? (A) $Al^{+3} < Mg^{+2} < Na^{+1} < F^{-1}$ (increasing ionic size ) (C) $I < Br < F < Cl$ ( increasing electron affinity) (D) $Li < Na < K < Rb$ (increasing metallic radius)			
28.	The total number of protons, electrons and neutrons in 12g of ${}^{12}_{6}C$ is - (A) $1.084 \times 10^{25}$ (B) $6.022 \times 10^{23}$ (C) $6.022 \times 10^{22}$ (D) 18			
29.	Roasting process is mainly carried out for ores containing.(A) Carbonates(B) Hydrates(C) Sulphides(D) Oxid	les		
30.	In the balanced equation $aFe_2O_3 + bH_2 \rightarrow cFe + dH_2O$ The values of a,b,c,d are respectively- (A) 1,1,2,3 (B) 1,1,1,1 (C) 1,3,2,3 (D)1,2,2	,3		
	Reg. &Corp Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Ko	ta (Kaj.) – 324005		

 Resonance®
 Website:www.resonance.ac.in | E-mail:contact@resonance.ac.in

 Bayes
 8390890444,8390870444 | CIN: U80302RJ2007PLC024029

#### Section-III (Math)



**36.** A crescent is formed of two circular arcs ACB, ADB of equal radius, centers E and F in the given figure. The perpendicular bisector of AB cuts the crescent at C and D, where CD = 12 cm, AB = 16 cm. The radius of arcs is :



- 37. In  $a \Delta PQR$ , PS is bisector of  $\angle P$  and  $\angle Q = 70^{\circ} \angle R = 30^{\circ}$  then (A) QS > PQ > PR (B) QS < PQ < PR (C) PQ > QS > SR (D) PQ < QS < SR
- 38. If  $\propto$ ,  $\beta$  are the roots of *a* quadratic equation  $x^2 3x + 5 = 0$ , then the equation whose roots are ( $\propto^2 3 \propto +7$ ) and ( $\beta^2 3\beta + 7$ ) is (A)  $x^2 + 4x + 1 = 0$  (B)  $x^2 - 4x + 4 = 0$  (C)  $x^2 - 4x - 1 = 0$  (D)  $x^2 + 2x + 3 = 0$
- **39.** Find all the integral values of a for which the quadratic equation (x a)(x 10) + 1 = 0 has integral roots. (A) 12, 8 (B) 12, 9 (C) 8, 7 (D) 12, 3

Reg. &Corp Office: CG Tower, A-46 & 52, IPIA, Near City Mall, Jhalawar Road, Kota (Raj.) – 324005

(R) Website:<u>www.resonance.ac.in</u> E-mail:<u>contact@resonance.ac.in</u>



Website:www.resonance.ac.in | E-mail:contact@resonance.ac.in Educating for better tomorrow 8390890444,8390870444 | CIN: U80302RJ2007PLC024029

- **50.** If a+b-c=1 and  $a^2+b^2-c^2=-1$  what is the sum of all possible values of  $a^2+b^2+c^2$ ,  $a,b,c \in I$ (A) 15 (B)16 (C)18 (D)17
- **51.** In the adjoining figure segment AD, BE and CF are the altitudes of triangle ABC. Find  $AD \times BC$  if  $AB \times AC = 469.6$  and  $BE \times CF=202.5$



**52.** Two circles of radii 4cm and 14cm have a common external tangent of length 24cm. The distance between the centres of these Circles (in cm) is



53. The remainder of  $f(x) = x^{100} + x^{50} + x^{10} + x^2 - 6$  when divided by  $(x^2 - 1)$  is. (A) (x+1) (B) -2 (C) 0 (D) 2

54. If a:b=c:d then how many of the following statements are correct (i) c(a+b)=a(c+d) (ii) d(a-b)=a(c-d)(iii)  $(ac-bd)(a^2+b^2)=(a^2-b^2)(ac+bd)$  (iv)  $\left(\frac{a^2}{b^2}\right)+\left(\frac{c^2}{d^2}\right)=\frac{2ac}{bd}$ (A) 1 (B) 2 (C) 3 (D) all

Educating for better tomorrow

**55.** A wooden cube has its outer faces painted in three colours (Black, Gray and White). The pattern of coloring on surfaces is shown here using two different views of the same cube. If this cube is divided into 64 equal small cubes, how many small cubes will have only two faces coloured – one in black and one in gray



8390890444,8390870444 | CIN: U80302RJ2007PLC024029

#### Section-IV (Biology)

56. It was observed in a group of tadpoles of a mutant frog reared in a laboratory that their development was arrested at a particular stage. The exact tissue that was affected by the mutation is unknown. The development was then resumed and accelerated by injecting the tadpoles with the extracts prepared from various tissues of the wild type frogs. The observations of the experiment are given below: Experiment **Tissue Extract Observations** No. Anterior lobe of pituitary Development resumed 1 2 Posterior lobe of pituitary Development did not resume Thyroid gland Development resumed 3 Anterior lobe of pituitary + Thyroid gland 4 Development resumed 5 Anterior + posterior lobe of pituitary Development resumed Posterior lobe of pituitary + Thyroid gland | Development did not resume 6 From the above observations, find out the tissue that is affected by the mutation. (B) Posterior lobe of pituitary (A) Anterior lobe of pituitary (C) Thyroid gland (D) Both pituitary and thyroid gland 57. In grasses the length of internodes increases by the activity of: (A) Apical meristem (B) Intercalary meristem (C) Lateral meristem (D) Secondary meristem 58. Which of the following statement(s) is/are correct? (i) Organ systems in different group of animals show various patterns of complexities. (ii) The digestive system in platyhelminthes has only a single opening to the outside of the body that serve as both mouth and anus, and is hence called complete. (iii) In open type of circulatory system, the blood is pumped out of the heart and the cells and tissues are directly bathed in it. (iv) In closed type, the blood is circulated through a series of vessels of varying diameters (arteries, veins and capillaries). (A) Only (i) (B) Both (ii) and (iii)  $(\mathbf{C})$  (i), (iii) and (iv) (D) All of these 59. Bryophytes are called "Amphibians of the plant kingdom" because : (A) They are found in only water. (B) Plants live in soil but are dependent on water for sexual reproduction. (C) It needs water for spores formation. (D) Water is essential for its survival. 60. Semen is a constituent of seminal plasma with \_\_\_\_ (C) Zygote (A) Ovum (B) Sperm (D) Follicle 61. The probability of the progeny having AaBbccDd genotypes from the cross between AaBbCcDd and AaBbCcDd is : (A) 1/16 (B) 1/32 (C) 1/256 (D) <sup>1</sup>/<sub>2</sub> 62. Which of the following statement (s) is/are correct? (i) Loose connective tissue contains fibroblasts, macrophages and mast cells. (ii) Adipose tissue is a type of dense connective tissue located mainly beneath the skin. (iii) Tendons and ligaments are examples of dense irregular connective tissue. (iv) Cartilage, bones and blood are various types of specialized connective tissue. (A) Only (i) (B) Both (ii) and (iv) (C) Both (i) and (iii) (D) (i), (iii) and (iv)63. Which of the following hormone acts upon the renal tubule and blood capillaries ? (A) Glucagon (B) Aldosterone (C) Vasopressin (D) Glucocorticoids



64.	Arrange the following events in a correct order that explains the mass flow of materials in the phloem? (i) Water diffuses into the sieve tube elements. (ii) Leaf cells produce sugar by photosynthesis. (iii) Solutes are actively transported into the sieve elements. (iv) Sugar is transported from cell to cell in the leaf. (v) Sugar moves down the stem. (A) (ii) – (iv) – (iii) – (iv) (B) (ii) – (iv) – (i) – (iii) – (v) (C) (i) – (ii) – (iv) – (v) (D) (iv) – (i) – (iii) – (v)			
65.	The cerebral cortex is: (A) The outer layer of cerebrum, called white matter (C) The outer layer of cerebrum, called grey matter.	. (B) Inner layer of c (D) Inner layer of c	<ul><li>(B) Inner layer of cerebrum, called white matter.</li><li>(D) Inner layer of cerebrum, called grey matter</li></ul>	
66.	<ul> <li>Which of the following phylum is being described by</li> <li>(i) They are bilaterally symmetrical,triploblastic, seg</li> <li>(ii) The body consists of head, thorax, abdomen and</li> <li>(iii) Circulatory system is of open type.</li> <li>(iv) Excretion takes place through malphigian tubule</li> <li>(A) Arthropoda (B) Annelida</li> </ul>	y the given statements? mented and coelomate a have jointed appendage s. (C) Mollusca	<ul> <li>ie given statements?</li> <li>inted and coelomate animals.</li> <li>ive jointed appendages.</li> <li>(C) Mollusca (D) Echinodermata</li> </ul>	
67.	Part of brain responsible for hearing is: (A) Cerebellum (B) Cerebrum	(C) Medulla	(D) Hypothalamus	
68.	Sickel-cell anaemia is an example of: (A) Sex-linked inheritance (C) Autosomal heritable disease	(B) Deficiency dise (D) Infectious dise	ease ase	
69.	<ul> <li>Which of the following is true regarding the male reproductive system?</li> <li>(A) Sperms are diploid.</li> <li>(B) It includes testes, accessory ducts and glands, and oviducts.</li> <li>(C) The scrotum keeps the testes warmer, thus helping it to promote the sperm formation.</li> <li>(D) Sertoli cells are found in seminiferous tubules and provide nutrition to germ cells.</li> </ul>			
70.	<ul> <li>Which of these statement(s) is/are correct?</li> <li>(i) Stamens are male reproductive part whereas carpels are female reproductive parts.</li> <li>(ii) In Spirogyra, asexual reproduction takes place by fragmentation.</li> <li>(iii) Vegetative propagation by leaves occurs in sweet potato.</li> </ul>			
	(A) (i) and (ii) (B) (ii) and (iii)	(C) (i) and (iii)	(D) All are correct	
Л	Reg. &Corp Office: CG Tower, A-46 Website:www.resonance.ac.in L Free	& 52, IPIA, Near City Mall, Jhalawar	Road, Kota (Raj.) – 324005	
	Educating for better tomorrow		RNTSE PAPER-A	

8390890444,8390870444 | <u>CIN: U80302RJ2007PLC024029</u>

# **KOTA 2023 RESULTS**

## JEE (Main) 2023 RESULT



## JEE (Adv.) 2023 RESULT

8 STUDENTS IN TOP-50 AIRs | 15 STUDENTS IN TOP-100 AIRs



### NEET (UG) 2023 RESULT



जैसा कोई नहीं !

**Resonance**®