B.S.ABDUR RAHMAN
UNIVERSITY
B.S.ABDUR RAHMAN INSTITUTE OF SCIENCE & TECHNOLOGY
(Estd. u/s 3 of the UGC Act, 1956)
Formerly B.S.ABDUR RAHMAN Crescent ENGG College

BSAUEEE 2016- Online Entrance Exam
MODEL QUESTION PAPER

Details:

Exam Type: Objective Questions.

Duration: 1:30 hrs.

Total Questions: 100 X 1 = 100 Marks.

For All B.Tech. Programmes (Except Biotechnology and Cancer Biotechnology)

SPILT UP	
Mathematics	50 X 1 = 50 Marks.
Physics	25 X 1 = 25 Marks.
Chemistry	25 X 1 = 25 Marks.

For B.Tech. (Biotechnology) and B.Tech. (Cancer Biotechnology)

SPILT UP	
Biology	50 X 1 = 50 Marks.
Physics	25 X 1 = 25 Marks.
Chemistry	25 X 1 = 25 Marks.

SAMPLE QUESTIONS IN MATHEMATICS.

1. If (A) r then which of the following is correct?
   (a) All the minors of order r which do not vanish
   (b) A has atleast one minor of r which does not vanish
   (c) A has atleast one (r+1) order minor which vanishes
   (d) All (r+1) and higher order minors should not vanish

2. In echelon form, which of the following is incorrect?
   (a) Every row of A which has all its entries O occurs below every row which has a non-zero entry
   (b) The first non-zero entry in each non-zero row is 1
   (c) The number of zeros before the first non-zero element in a row is less than the number of such zeros in the next row
   (d) Two rows can have same number of zeros before the first non-zero entry.

3. In the homogeneous system If (A) the number of unknowns then the system has
   (a) Only trivial solution
   (b) Trivial solution and infinitely many non-trivial solutions
   (c) Only non-trivial solutions
   (d) No solution

4. Which of the following statements is correct regarding homogeneous system
   (a) Always inconsistent
   (b) Has only trivial solution
   (c) Has only non-trivial solutions
   (d) Has only trivial solution if rank of the coefficient matrix is equal to the number of unknowns

5. The centre and radius of the sphere $|\bar{r}-(2\bar{i}-\bar{j}+4\bar{k})|=5$ are

(a) (2,-1,4) and 5 (b) (2,1,4) and 5

(c) (-2,1,4) and 6 (d) (2,1,-4) and 5

6. Chord AB is a diameter of the sphere $|\bar{r}-(2\bar{i}+\bar{j}-6\bar{k})|=\sqrt{18}$ with coordinates of A as (3,2,-2) the coordinates of B is

(a) (1,0,10) (b) (-1,0,-10)

(c) (-1,0,10) (d) (1,0,-10)

nts whose

7. The non- parametric vector equation of a plane passing through three points whose P. Vs are $\bar{a},\bar{b},\bar{c}$ is

(a) $\left[\bar{r}-\bar{a}\ \bar{b}-\bar{a}\ \bar{c}-\bar{a}\right]=0$ (b) $\left[\bar{r},\bar{a},\bar{b}\right]=0$

(c) $\left[\bar{r},\bar{b},\bar{c}\right]=0$ (d) $\left[\bar{a},\bar{b},\bar{c}\right]=0$

8. The vector equation of a sphere whose centre is origin and radius 'a' is

(a) $|\bar{r}|=|\bar{a}|$ (b) $\bar{r}-\bar{c}=\bar{a}$ (c) $\bar{r}=\bar{a}$ (d) $\bar{r}=a$

9. The fourth roots of unity are

(a) $1\pm i,-1\pm i$ (b) $\pm i,1\pm i$ (c) $\pm 1,\pm i$ (d) 1, -1

10. Polynomial equation P(x) = 0 admits conjugate pairs of roots only if the coefficients are

(a) Imaginary (b) Complex

(c) Real (d) Either real or complex

SAMPLE QUESTIONS IN PHYSICS.

11. A dipole is placed in a uniform electric field with its axis parallel to the field. It experiences

(a) only a net force
(b) only a torque
(c) both a net force and torque
(d) neither a net force nor a torque

12. The unit of permittivity is

(a) $C^2 N^{-1} m^{-2}$ (b) $N m^2 C^{-2}$ (c) $H m^{-1}$ (d) $N C^{-2} m^{-2}$

13. A toaster operating at 240V has a resistance of 120 . The power is

(a) 400 W (b) 2 W (c) 480 W (d) 240 W

14. In the case of insulators, as the temperature decreases, resistivity

(a) Decreases
(b) increases
(c) remains constant
(d) becomes zero

15. A charge of 60 C passes through an electric lamp in 2 minutes. Then the current in the lamp is

(a) 30 A (b) 1 A (c) 0.5 A (d) 5 A

16. In a thermocouple, the temperature of the cold junction is $20^{O}C$, the neutral temperature is $270^{O}C$. The temperature of inversion is

(a) $520^{O}C$ (b) $540^{O}C$ (c) $500^{O}C$ (d) $510^{O}C$

17. The torque on a rectangular coil placed in a uniform magnetic field is large, when

(a) The number of turns is large
(b) The number of turns is less
(c) The plane of the coil is perpendicular to the field
(d) The area of the coil is small

18. An ideal voltmeter has

(e) Zero resistance
(f) Finite resistance less than G but greater than Zero
(g) Resistance greater than G but less than infinity
(h) Infinite resistance

19. The unit henry can also be written as

(a) Vs A^{-1} (b) Wb A^{-1} (c) s (d) All

20. A DC of 5A produces the same heating effect as an AC of

(a) 50 A rms current (b) 5 A peak current

(c) 5A rms current (d) None of these

SAMPLE QUESTIONS IN CHEMISTRY.

21. NH_4OH is a weak base because

(a) It has low vapour pressure (b) It is only partially ionized

(c) It is completely ionized (d) It has low density

22. The feasibility of a redox reaction can be predicted with the help of

(a) Electronegativity (b) Electrochemical series

(c) Electron affinity (d) Equivalent conductance.

23. When ethyl iodide is treated with dry silver oxide it forms.

(a) Ethyl alcohol (b) Diethyl ether

(c) Silver ethoxide (d) Ethyl methyl ether

24. Tollens reagent is

(a) Ammoniacal cuprous chloride (b) Ammoniacal cuprous oxide.

(c) Ammoniacal silver nitrate (d) Ammoniacal silver chloride.

25. The acid that cannot be prepared by Grignard reagent

(a) Acetic acid (b) Formic acid (b) Butyric acid (d) Benzoic acid.

26. Nitration of nitrobenzene results in

(a) o-dinitro benzene (b) 1, 3, 5–trinitro benzene

(c) m-dinitrobenzene (d) p-dinitrobenzene

27. Which is not true about amino acid?

(a) Amino acid forms Zwitter ion (b) Has isoelectric point

(c) Dual behaviours (d) Aminoacid is insoluble in NaOH solution.

28. Lanthanides are extracted from

(a) Limonite (b) Monazite (c) Magnetite (d) Cassiterite

29. Which of the ions will give colourless aqueous solution?

(a) Ni^{2+} (b) Fe^{2+} (c) Cu^{2+} (d) Cu^{+}

30. Faraday's laws of electrolysis are related to

(a) Atomic number of the cation (b) Atomic number of the anion

(c) Equivalent weight of the electrolyte (d) Speed of the cation

The below section is only for candidates appearing entrance exam for B.Tech – Biotechnology and B.Tech – Cancer Biotechnology.

(B.Tech – Biotechnology and B.Tech- Cancer Biotechnology candidates are exempted from MATHEMETICS QUESTIONS)

SAMPLE QUESTIONS IN BIOLOGY.

1. One gram of carbohydrate is capable of yielding energy equivalent of

(a) 5.1 calories (b) 4.1 calories

(c) 4.9 calories (d) 6.5 calories

2. Rickets and osteomalacia are caused by deficiency of

(a) Vitamin A (b) Vitamin A and C

(c) Vitamin C (d) Vitamin D

3. The enzymes of the stomach are

(a) Pepsin and rennin (b) Pepsinogen

(c) Trypsin (d) Chymotrypsin

4. Dental caries starts from

(a) Dentine (b) Pulp cavity

(c) Enamel

(d) Teeth root

5. Rheumatic arthritis affecting the

(a) Connective tissues

(b) Abdominal tissue

(c) Brain tissue

(d) Cardiovascular tissue

6. Bacteriophages are

(a) Bacteria

(b) Virus

(c) Fungi

(d) None of the above

7. Thick filaments formed of the contractile protein is

(a) Myosin

(b) Actin

(c) Tropomyosin

(d) Troponin

8. Respiratory center in the brain is

(a) Cerebrum

(b) Cerebellum

(c) Medulla oblongata

(d) Phrenic nerves

9. Heart muscles cause rhythmic contraction and relaxation maintained by

(a) Sino-atrial node

(b) Atrio-ventricular node

(c)Bundle of His and Purkinje fibres

(d) All the above

10. Zoonotic infections are

(a) Parasitic infections which man acquires from mammals

(b) Parasitic infections which man acquires from man

(c) Parasitic infections which man acquires from animals

(d)Parasitic infections which man acquires from parasitizes