

MEDICAL DIVISION



VIBRANT ACADEMY

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SAMPLE PAPER

SEAT (SCHOLARSHIP CUM EARLY ADMISSION TEST) **X TO XI MOVING (ROOT COURSE)**

Time : 1 Hours

Maximum Marks : 200

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

INSTRUCTIONS

A. General :

1. This booklet is your Question Paper containing **50** questions. The booklet has **24** pages.
2. The **question paper CODE** is printed on the right hand top corner of this sheet and on the back page (page no. **24**) of this booklet.
3. The question paper contains **2** blank pages for your rough work. No additional sheets will be provided for rough work.
4. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed to be carried inside the examination hall.
5. Fill in the boxes provided below on this page and also write your **Name** and **Regn. No.** in the space provided on the back page (page no. **24**) of this booklet.
6. The answer sheet, a machine-readable Objective Response Sheet (**ORS**), is provided separately.
7. **DO NOT TAMPER WITH / MUTILATE THE ORS OR THE BOOKLET.**
8. Do not open the question-paper booklet before being instructed to do so by the invigilators.

B. Question paper format

Read the instructions printed on the back page

C. Marking scheme

(page no. **24**) of this booklet.

Name of the candidate

UID Number

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I have read all the instructions and shall abide by them.

I have verified all the information filled in by the candidate.

.....
Signature of the Candidate

.....
Signature of the invigilator

USEFUL DATA

Atomic weights: Al = 27, Mg = 24, Cu = 63.5, Mn = 55, Cl = 35.5, O = 16, H = 1, P = 31, Ag = 108, N = 14, Li = 7, I = 127, Cr = 52, K=39, S = 32, Na = 23, C = 12, Br = 80, Fe = 56, Ca = 40, Zn = 65.5, Ti = 48, Ba = 137, U = 238, Co= 59, B =11, F = 19, He = 4, Ne = 20, Ar = 40, Mo = 96, g = 10 m/s²

PART I : PHYSICS
Single Correct Choice Type

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) for its answer, out of which **ONLY ONE** is correct.

1. A fuse wire is inserted in a?
(1) Live wire
(2) In the neutral wire
(3) In the earth wire
(4) May be connected in any line

2. Which instrument is used for measuring electric potential?
(1) Ammeter
(2) galvanometer
(3) voltmeter
(4) potentiometer

3. The light sensitive cell present on retina and is sensitive to the intensity of light is:
(1) Cones
(2) Rods
(3) Both rods and cones
(4) None of these

4. The colored light that deflects most while passing through a prism is
(1) Yellow
(2) Violet
(3) Blue
(4) Red

5. The part of the eye which causes maximum deflection in light entering the eye from external objects?
(1) Lens
(2) Cornea
(3) Iris
(4) Pupil

6. A concave mirror gives real, inverted and same size image if the object is placed
(1) F
(2) At infinity
(3) C
(4) C

7. The speed of light in vacuum is
(1) 3×10^5 m/s
(2) 3×10^8 m/s
(3) 3×10^8 km/s
(4) 3×10^6 m/s

8. For a spherical mirror, _____ is true.
(1) $f = 2R$
(2) $R = 2f$
(3) $fR = 2$
(4) $fR = 1/2$

9. When Light Travels From One Medium To Another Medium Light Ray Bend From Its Path This Is Known As-
(1) Reflection
(2) Refraction
(3) Dispersion
(4) none

10. What should be the core of an electromagnet?
(1) soft iron
(2) hard iron
(3) rusted iron
(4) none of above

PART II : CHEMISTRY
Single Correct Choice Type

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) for its answer, out of which **ONLY ONE** is correct.

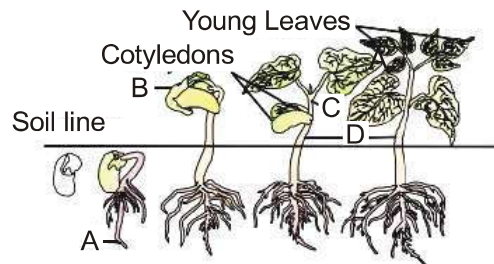
11. The function of quick lime in soda lime mixture is to
(1) Absorb moisture present in soda lime
(2) Increase the efficiency of soda lime
(3) Increase the pH of soda lime
(4) Take part in reaction with NaOH
12. Which one of the following will turn blue litmus red?
(1) Vinegar (2) Lime water
(3) Baking soda solution (4) Washing soda solution
13. The isomeric pair is
(1) ethane and propane (2) propane and butane
(3) ethane and ethene (4) butane and 2-methyl propane
14. Both CO₂ and H₂ gases are
(1) heavier than air (2) colourless
(3) acidic in nature (4) soluble in water
15. When carbon dioxide is passed through lime water,
(1) calcium hydroxide is formed
(2) white precipitate of CaO is formed
(3) lime water turns milky
(4) colour of lime water disappears
16. Rancidity can be prevented by
(1) adding antioxidants (2) storing food away from light
(3) keeping food in refrigerator (4) all of these
17. On immersing an iron nail in CuSO₄ solution for few minutes, you will observe
(1) no reaction takes place
(2) the colour of solution fades away
(3) the surface of iron nails acquire a black coating
(4) the colour of solution changes to green
18. The bronze metal is made up of
(1) Cu & Zn (2) Zn & Ni (3) Cu & Sn (4) Cu, Zn, Tn
19. An element has an atomic number of 15 with which of the following elements will it show similar chemical properties.
(1) 4Be (2) 10Ne (3) 7N (4) 8O
20. An element belongs to period 2 and group 2. The number of valence electrons in the atoms of this element is.
(1) 2 (2) 4 (3) 3 (4) 1

PART III : BIOLOGY
Single Correct Choice Type

This section contains 20 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) for its answer, out of which **ONLY ONE** is correct.

21. The organelles that contain their own genetic material are :
(1) Mitochondria, Vacuoles (2) Plastids, Golgi complex
(3) Mitochondria, Plastids (4) Ribosomes, Nucleolus
22. The solid or liquid contents are stored in :
(1) Vacuoles (2) Mitochondria
(3) Ribosomes (4) Golgi complex
23. The organelle that is present only in plant cells is :
(1) Mitochondria (2) Endoplasmic reticulum
(3) Ribosomes (4) Plastids
24. What is the mode of nutrition in bacteria?
(1) Autotrophic (2) Heterotrophic
(3) Autotrophic & Heterotrophic (4) None of these
25. Rohu and Catla are types of :
(1) Fresh water fish (2) Marine water fish
(3) Both (1) and (2) (4) None of these
26. Diarrhoea, cholera, typhoid are the diseases that have one thing in common that is :
(1) All of them are caused by bacteria
(2) All of them is transmitted by contaminated food and water
(3) All of them are cured by antibiotics
(4) All of the above
27. Larynx is called :
(1) Voice box (2) Music box
(3) Respiratory organ (4) None of these
28. The connective tissue that connects muscle to bone is called :
(1) Ligament (2) Tendon
(3) Nervous tissue (4) All of the above
29. The flexibility in plants is due to a tissue called :
(1) Chlorenchyma (2) Parenchyma
(3) Sclerenchyma (4) Collenchyma
30. Proteins after digestion are converted into :
(1) Carbohydrates (2) Small globules
(3) Amino acids (4) Starch
31. Which of these juices is secreted by pancreas?
(1) Trypsin (2) Pepsin
(3) Bile juice (4) Both (1) and (2)

32. Respiratory pigment in human body is :
- (1) Chlorophyll (2) Water
(3) Blood (4) Haemoglobin
33. Pricking of pin is called :
- (1) Response (2) Stimulus
(3) Reaction (4) Reflex
34. Cytokinins promotes :
- (1) Wilting of leaves (2) Cell division
(3) Responses (4) Diffussion
35. Refer the diagram which shows the stages of seed germination, & find the correct labelling for A, B, C & D



A	B	C	D
(1) Plumule	Cotyledons	Hypocotyl	Epicotyl
(2) Radicle	Seed coat	Epicotyl	Hypocotyl
(3) Hypocotyl	Cotyledons	Epicotyl	Root hair
(4) Root hair	Cotyledons	Plumule	Hypocotyl

36. Pick out the correct statements :
- (i) Cytokinins specially help in delaying senescence.
(ii) Auxins are involved in regulating apical dominance.
(iii) Ethylene is specially useful in enhancing seed germination.
(iv) Gibberellins are responsible for immature falling of leaves.
- Which of the above statements are correct?
- (1) (i) and (iii) (2) (i) and (iv) (3) (ii) and (iii) (4) (i) and (ii)
37. A potted plant placed near the window bends outwardly due to :
- (1) Greater O₂ availability to the tip
(2) More auxin concentration on the shaded side
(3) Greater light availability to tip
(4) Availability of necessary warmth to the tip
38. What will happen if the secretion of parietal cells of gastric glands is blocked with an inhibitor?
- (1) Gastric juice will be deficient in chymosin
(2) Gastric juice will be deficient in pepsinogen
(3) In the absence of HCl secretion, inactive pepsinogen is not converted into the active enzyme pepsin
(4) Enterokinase will not be released from the duodenal mucosa and so trypsinogen is not converted to trypsin

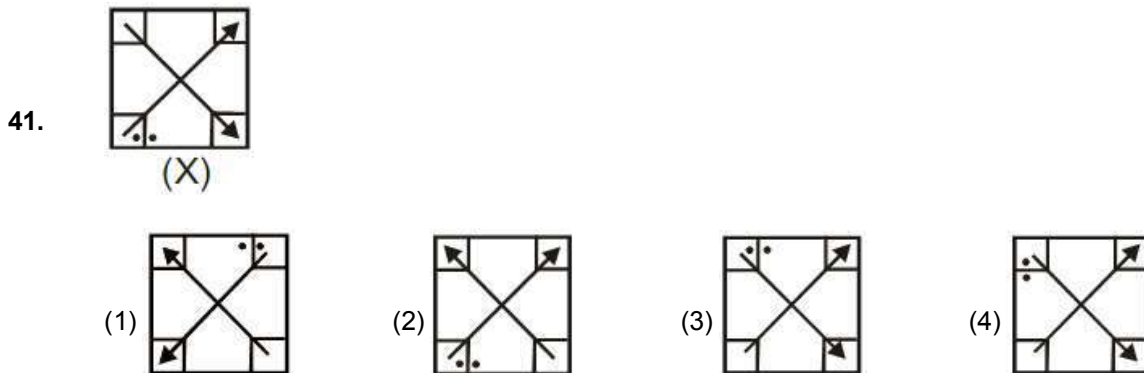
39. Although much CO_2 is carried in blood, yet blood does not become acidic, because :
- (1) It is absorbed by the leucocytes
 - (2) Blood buffers play an important role in CO_2 transport.
 - (3) It combines with water to form H_2CO_3 which is neutralized by Na_2CO_3
 - (4) It is continuously diffused through tissues and is not allowed to accumulate
40. Which of the following statements are true / false?
- (i) The blood transports CO_2 comparatively easily because of its higher solubility.
 - (ii) Approximately 8-9% of CO_2 is transported being dissolved in the plasma of blood.
 - (iii) The carbon dioxide produced by the tissues, diffuses passively into the blood stream and passes into red blood corpuscles and react with water to form H_2CO_3 .
 - (iv) The oxyhaemoglobin (HbO_2) of the erythrocytes is basic.
 - (v) The chloride ions diffuse from plasma into the erythrocytes to maintain ionic balance.
- (1) (i), (iii) and (v) are true (ii) and (iv) are false.
 - (2) (i), (iii) and (v) are false, (ii) and (iv) are true.
 - (3) (i), (ii) and (iv) are true, (iii) and (v) are false.
 - (4) (i), (ii) and (iv) are false (iii) and (v) are true.

PART IV : MENTAL ABILITY

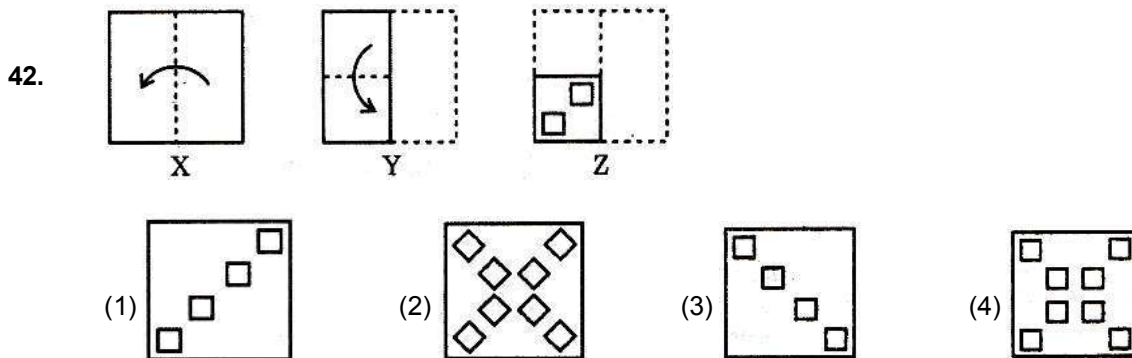
Single Correct Choice Type

This section contains 10 multiple choice questions. Each question has 4 choices (1), (2), (3) and (4) for its answer, out of which **ONLY ONE** is correct.

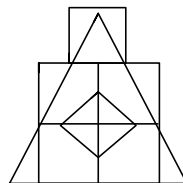
Directions (Q. 41) : In this following question, a figure marked (X) is followed by four figures (1), (2), (3) and (4) which show the possible water images of figure (X). Choose one out of these four figures which shows the correct water image of the figure (X).



Directions (Q. 42) : In this following question consists of a set of three figures X, Y and Z showing a sequence of folding a piece of paper. Fig.(Z) shows the manner in which the folded paper has been cut. These three figures are followed by four answer figures from which you have to choose a figure which would most closely resemble the unfolded form of fig.(Z).



43. How many triangles & squares are there in the figure below?



- (1) 15, 7 (2) 16, 7 (3) 15, 6 (4) 14, 7

Directions (Q. 44 to Q. 45) : Find the missing terms in the following series

44. 11, 10, ?, 100, 1001, 1000, 10001
 (1) 101 (2) 110 (3) 111 (4) None of these
45. A, B, N, C, D, O, E, F, P, ?, ?, ?
 (1) G, H, I (2) G, H, J (3) G, H, Q (4) J, K, L

46. In a certain code language, RUSTICATE is written as QTTUIDBSD. How would STATISTIC be written in that code?
 (1) RSBUJTUHB (2) RSBUITUHB
 (3) RSBUIRSJD (4) TUBUITUMB
47. If BOMBAY is written as MYMYMY, how will TAMILNADU be written in that code?
 (1) TIATIATIA (2) MNUMNUMNU
 (3) IATIATIAT (4) ALDALDALD
48. If 'oranges' are 'apples', 'bananas' are 'apricots', 'apples' are 'chillies', 'apricots' are 'oranges' and 'chillies' are 'bananas', then which of the following are green in colour?
 (1) Apricots (2) Apple
 (3) Chillies (4) Bananas

Directions (Q. 49 & Q. 50) : Study the information given below & answer the following questions : 'A + B' means 'A is the daughter of B' ; 'A - B' means 'A is the husband of B', 'A × B' means 'A is the brother of B'.

49. If $P + Q - R$, which of the following is true?
 (1) R is the mother of P. (2) R is the sister-in-law of P.
 (3) R is the aunt of P. (4) R is the mother-in-law of P.
50. If $P \times Q + R$, which of the following is true?
 (1) P is the brother of R. (2) P is the uncle of R.
 (3) P is the son of R. (4) P is the father of R.

Name of the candidate

UID Number

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B. Question paper format :

9. The question paper consists of 4 parts (Physics, Chemistry, Biology and Mental).

C. Marking Scheme :

10. For each question, you will be **awarded 4 marks** if you darken the bubble corresponding to the correct answer and **zero mark** if no bubble is darkened. In case of bubbling of incorrect answer, **minus one (-1) mark** will be awarded.

ANSWER KEY

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