NEET UG (2025)

Full Practice Test - 2

DURATION: 60 Minutes | **M.MARKS : 192**

Topics Covered

Physics:	Motion in a straight line, Motion in a plane, Laws of motion
Chemistry:	Solutions, State of Matter
Biology:	**(Botany) :** Cell Cycle and Cell Division
	(Zoology): Breathing and Exchange of Gases

General Instructions:

1. Immediately fill in the particulars on this page of the test booklet.
2. The test is of **60 minutes** duration.
3. The test booklet consists of **48** questions. The maximum marks are **192**.
4. All questions are compulsory.
5. There is only one correct response for each question.
6. Each correct answer will give **4** marks while **1** Mark will be deducted for a wrong MCQ response.
7. No student is allowed to carry any textual material, printed or written, bits of papers, pager, mobile phone, any electronic device, etc. inside the examination room/hall.
8. On completion of the test, the candidate must hand over the Answer Sheet to the Invigilator on duty in the Room/Hall. However, the candidates are allowed to take away this Test Booklet with them.
9. **Do not fold or make any stray mark on the Answer Sheet (OMR).**

OMR Instructions:

1. Use blue/black dark ballpoint pens.
2. Darken the bubbles completely. Don't put a tick mark or a cross mark where it is specified that you fill the bubbles completely. Half-filled or over-filled bubbles will not be read by the software.
3. Never use pencils to mark your answers.
4. Never use whiteners to rectify filling errors as they may disrupt the scanning and evaluation process.
5. Writing on the OMR Sheet is permitted on the specified area only and even small marks other than the specified area may create problems during the evaluation.
6. Multiple markings will be treated as invalid responses.
7. **Do not fold or make any stray mark on the Answer Sheet (OMR).**

Name of the Student (In CAPITALS) : _____

Roll Number : _____

OMR Bar Code Number : _____

Candidate's Signature : _____ **Invigilator's Signature** _____

SECTION-(I) PHYSICS

1. When a car is stopped by applying brakes, it stops after travelling a distance of 100 m. If speed of car is halved and same retarding acceleration is applied then it stops after travelling a distance of?

(1) 25 m (2) 50 m
(3) 75 m (4) 100 m

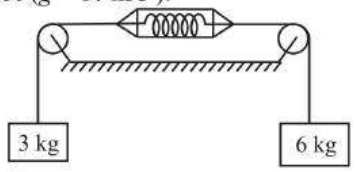
2. The displacement x of a particle varies with time t as $x = ae^{-\alpha t} + be^{\beta t}$, where a, b, α and β are positive constants. The velocity of the particle will:

(1) Go on decreasing with time
(2) Be independent of α and β
(3) Drop to zero when $\alpha = \beta$
(4) Go on increasing with time

3. A ball is allowed to fall from top of a building. If t_1 is time taken to fall first $1/4^{th}$ of its height and t_2 is time taken to fall last $1/4^{th}$ of its height then, t_2/t_1 is

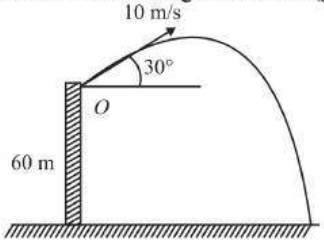
(1) $\frac{\sqrt{3}-2}{1}$
(2) $\frac{\sqrt{3}-\sqrt{2}}{1}$
(3) $\frac{\sqrt{2}-3}{1}$
(4) $\frac{2-\sqrt{3}}{1}$

4. In the given diagram, reading of spring balance will be ($g = 10$ m/s^2):



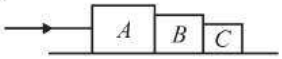
(1) 30 N
(2) 40 N
(3) 60 N
(4) 80 N

5. A ball is projected from a point O as shown in figure. It will strike the ground after ($g = 10$ m/s^2):



(1) 4 s (2) 3 s
(3) 2 s (4) 5 s

6. Three blocks A, B and C of masses 4 kg, 2 kg and 1 kg respectively, are in contact on a frictionless surface, as shown. If a force of 14 N is applied on the 4 kg block, then the contact force between A and B is:



(1) 18 N (2) 2 N
(3) 6 N (4) 8 N

7. A projectile is fired from the level ground at angle θ above the horizontal. Angle of elevation (ϕ) of highest point from point of projection is:

(1) $\tan\phi = 2\tan\theta$ (2) $\tan\phi = \tan\theta$
(3) $\tan\phi = \frac{1}{2}\tan\theta$ (4) $\tan\phi = \frac{1}{4}\tan\theta$

8. A projectile is thrown with speed 40 ms^{-1} at angle θ from horizontal. It is found that projectile is at same height at 1s and 3s. What is the angle of projection?

(1) $\tan^{-1}\left(\frac{1}{\sqrt{2}}\right)$ (2) $\tan^{-1}\left(\frac{1}{\sqrt{3}}\right)$
(3) $\tan^{-1}(\sqrt{3})$ (4) $\tan^{-1}(\sqrt{2})$

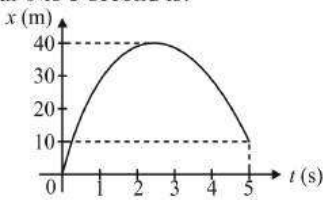
9. A stone thrown upward with a speed u from the top of a tower reaches the ground with a velocity $4u$. The height of the tower is:

(1) $\frac{15u^2}{2g}$ (2) $\frac{7u^2}{2g}$
(3) $\frac{16u^2}{g}$ (4) Zero

10. A particle is dropped under gravity from rest from a height h ($g = 9.8$ m/sec^2) and it travels a distance $9h/25$ in the last second, the height h is:

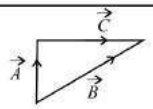
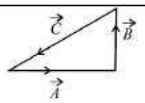
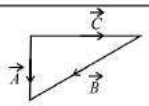
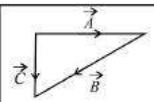
(1) 100 m (2) 122.5 m
(3) 145 m (4) 167.5 m

11. Displacement-time (x – t) graph of a particle moving along a straight-line path is shown in figure. Average speed of particle in the time interval 0 to 5 second is:



(1) 2 m/s (2) 16 m/s
(3) 12 m/s (4) 14 m/s

12. Match **List-I** with **List-II**.

	List-I		List-II
(A)	$\vec{C}-\vec{A}-\vec{B}=0$	(I)	
(B)	$\dot{A}-\dot{C}-\vec{B}=0$	(II)	
(C)	$\vec{B}-\vec{A}-\vec{C}=0$	(III)	
(D)	$\vec{A}+\vec{B}=-\vec{C}$	(IV)	

Choose the **correct** answer from the options given below:

(1) A-I, B-IV, C-II, D-III
(2) A-IV, B-III, C-I, D-II
(3) A-III, B-II, C-IV, D-I
(4) A-IV, B-I, C-III, D-II

SECTION-(II) CHEMISTRY

13. 3 g urea is dissolved in 45 g of water. The relative lowering of vapour pressure is:
(molar mass of urea = 60 g/mol, H_2O = 18 g/mol).

(1) 0.05 (2) 0.04
(3) 0.02 (4) 0.01

14. The amount of urea to be dissolved in 500 g of water (K_f = 1.86 K kg mol^{-1}) to produce a depression of 0.186°C in the freezing point is:
(molar mass of urea = 60 g/mol).

(1) 9 g (2) 6 g
(3) 3 g (4) 0.3 g

15. Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:

Assertion A: 0.1 M solution of NaCl has greater osmotic pressure than 0.1 M solution of glucose at same temperature.

Reason R: In solution, NaCl dissociates to produce more number of particles.

In the light of the above statements, choose the **correct** answer from the options given below.

(1) A is true but R is false.
(2) A is false but R is true.
(3) Both A and R are true and R is the correct explanation of A.
(4) Both A and R are true but R is not the correct explanation of A.

16. A 5.25% solution of a substance is isotonic with a 1.5% solution of urea (molar mass = 60 g mol^{-1}) in the same solvent. If the densities of both the solutions are assumed to be equal to 1 g cm^{-3}, molar mass of the substance will be;

(1) 210.0 g mol^{-1}
(2) 90.0 g mol^{-1}
(3) 115.0 g mol^{-1}
(4) 105.0 g mol^{-1}

17. Dissolving 120 g of urea (molar mass = 60 g/mol) in 1000 g of water gave a solution of density 1.15 g/mL. The molarity of the solution is;

(1) 1.78 M (2) 1.00 M
(3) 2.05 M (4) 2.22 M

18. Match **List-I** with **List-II**.

	List-I		List-II
(A)	$C_2H_5OH + H_2O$	(I)	Molal elevation constant
(B)	Ebullioscopic constant	(II)	Molal depression constant
(C)	Cryoscopic constant	(III)	Non-ideal solution with positive deviation
(D)	$H_2O + H_2SO_4$	(IV)	Non-ideal solution with negative deviation

Choose the **correct** answer from the options given below:

(1) A-IV, B-II, C-I, D-III
(2) A-III, B-I, C-II, D-IV
(3) A-III, B-II, C-I, D-IV
(4) A-IV, B-I, C-II, D-III

19. A solution containing components A and B exhibits positive deviation from Raoult's law only when

A. $\Delta V_{mixing} = +ve$

B. $\Delta H_{mixing} = -ve$

C. A — B attraction forces < A — A and B — B attraction forces

D. A — B attraction forces > A — A and B — B attraction forces

Correct Statements are:

(1) A, B and C (2) A and B

(3) B and D (4) A and C

20. Which of the following aqueous solutions has the highest freezing point?

(1) 0.1 molal $Al_2(SO_4)_3$

(2) 0.1 molal $BaCl_2$

(3) 0.1 molal $AlCl_3$

(4) 0.1 molal NH_4Cl

21. The vapour pressure of pure benzene at 88°C is 957 mm of Hg and that of toluene at the same temperature is 379.5 mm of Hg. Calculate the composition of benzene-toluene mixture boiling at 88°C:
(P_T = 760 mm of Hg)

(1) $\chi_{benzene} = 0.66;\ \chi_{toluene} = 0.34$

(2) $\chi_{benzene} = 0.34;\ \chi_{toluene} = 0.66$

(3) $\chi_{benzene} = \chi_{toluene} = 0.5$

(4) $\chi_{benzene} = 0.75;\ \chi_{toluene} = 0.25$

22. If 20 mL gas at 1 atm is expanded to 50 mL at constant T, then what is the final pressure?

(1) $20 \times \frac{1}{50}$ (2) $50 \times \frac{1}{20}$

(3) $1 \times \frac{1}{20} \times 50$ (4) 20×50

23. In the equation of state of an ideal gas PV = nRT, the value of the universal gas constant would depend only on:

(1) The nature of the gas

(2) The pressure of the gas

(3) The units of the measurement

(4) None of these

24. A sample of gas occupies 100 mL at 27°C and 740 mm of Hg pressure. When its volume is changed to 80 mL at 740 mm of Hg pressure, the temperature of the gas will be:

(1) 21.6 °C

(2) 240 °C

(3) –33 °C

(4) 89.5 °C

SECTION-(III) BOTANY

25. Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R:

Assertion A: In an animal cell, cytokinesis is achieved by the appearance of a furrow in the plasma membrane.

Reason R: During karyokinesis in animal cells, the furrow gradually deepens and ultimately joins in the centre dividing the cell cytoplasm into two.

In the light of the above statements, choose the **correct** answer from the options given below:

(1) A is true but R is false.

(2) A is false but R is true.

(3) Both A and R are correct and R is the correct explanation of A.

(4) Both A and R are correct but R is NOT the correct explanation of A.

26. Match **List-I** with **List-II**.

	List-I		**List-II**
(A)	Chromosomes start pairing together	(I)	Diplotene
(B)	Four chromatids of each bivalent appear as tetrads	(II)	Zygotene
(C)	Formation of X-shaped structure chiasmata	(III)	Diakinesis
(D)	Transition to metaphase	(IV)	Pachytene

Choose the **correct** answer from the options given below:

(1) A-III, B-II, C-I, D-IV

(2) A-II, B-IV, C-I, D-III

(3) A-I, B-IV, C-III, D-II

(4) A-IV, B-III, C-II, D-I

27. Identify the **correct** statement(s) from the following.

A. Gametes are formed from specialised diploid cells.

B. Meiosis ensures the production of haploid phase in the life cycle of sexually reproducing organisms.

C. During meiosis, chromosome number reduces by half.

D. Meiosis division results in the production of haploid daughter cells.

(1) A only (2) A and C only

(3) B and D only (4) A, B, C and D

28. Identify the **correct** statements from the following.

A. The growth of multicellular organisms is due to meiosis.

B. Cell growth results in disturbing the ratio between the nucleus and the cytoplasm.

C. It is essential for the cell to divide to restore the nucleo-cytoplasmic ratio.

D. A very significant contribution of mitosis is cell repair.

(1) A and D only (2) B and A only

(3) A and C only (4) B, C and D only

29. Choose the **correct** statement with respect to G_0 phase.

(1) Cells that do not divide further exit G_2 phase to enter this phase.

(2) Cells of this stage remain metabolically inactive and no longer proliferate.

(3) Cells of this stage remain active but no longer proliferate unless called to do so depending on the requirement of organism.

(4) This phase is also known as active stage.

30. Identify the **incorrect** statement.

(1) Four haploid cells are formed at the end of meiosis I.

(2) In some organisms, karyokinesis is not followed by cytokinesis leading to multinucleate condition.

(3) Variations are very important for the process of evolution.

(4) Cell-plate represents the middle lamella between the walls of two adjacent cells.

31. Which event marks the start of the second phase of mitosis?

(1) Splitting of centromeres.

(2) The complete disintegration of the nuclear envelope.

(3) Attachment of spindle fibres to kinetochores of chromosomes.

(4) Chromosomes alignment at the equatorial plate.

32. Movement of sister chromatids toward opposite poles is achieved by:

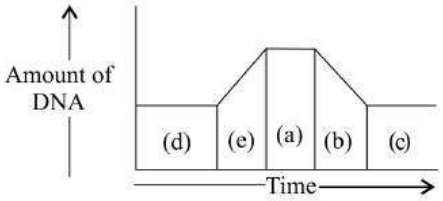
(1) shortening of microtubules attached to centromere.

(2) shortening of microtubules attached to kinetochores.

(3) elongation of microtubules attached to kinetochores.

(4) elongation of microtubules attached to centromere.

33. Given diagram represents life cycle of a cell showing the changes in DNA content during the various periods as a function of time:



Find out the **correct** option:

(1) (e) – Gap 1 stage, (a) – Synthetic phase

(2) (d) – G_0 stage, (b) – Gap-1 stage, (c) – M stage

(3) (c) –Synthetic phase, (b) – M-phase

(4) (a) – Pre-mitotic phase, (d) – G_1 Stage

34. The number of chromosome and amount of DNA in maize root tip cell in G_1 phase of cell cycle is 20 and 20 Pg respectively. What will be the number of chromosome and amount of DNA in beginning of G_2 phase?

(1) 20; 20 Pg

(2) 20; 40 Pg

(3) 10; 20 Pg

(4) 40; 40 Pg

35. Identify the stages of cell division marked as (i), (ii), and (iii).

(a) Nucleolus, golgi complex and ER reforms in ____(i)____.

(b) Cells are metabolically active but no longer proliferate in ____(ii)____ stage.

(c) Centromere split and chromatids separate during ___(iii)____.

Mark the **correct** option.

	(i)	(ii)	(iii)
(1)	Prophase	G_0	Metaphase
(2)	Telophase	G_0	Anaphase
(3)	Prophase	G_1	Anaphase
(4)	Telophase	G_2	Metaphase

36. What is **not** true about cell cycle?

A. During G_1 phase there is active synthesis of RNA and proteins but no change in its DNA content.

B. In synthesis or S phase, each chromosome carries a duplicate set of genes.

C. During G_2 phase, a cell contains double the amount (4C) of DNA present in the original diploid cell (2C).

D. In S-phase a cell doubles the original diploid (2n) chromosome number.

(1) C and D only

(2) B and C only

(3) D only

(4) B, C and D only

SECTION-(IV) ZOOLOGY

37. How much approximately amount of CO_2 are delivered to the alveoli from the 1000 ml of deoxygenated blood?

(1) 0.4 ml (2) 4 ml

(3) 40 ml (4) 400 ml

38. The maximum amount of carbon dioxide carried in blood is **X** as **Y**

Choose the option which fills the blank **correctly**.

(1) 70%, bicarbonate ions

(2) 97%, carbamino haemoglobin

(3) 97% bicarbonate ions

(4) 70% through plasma

39. Choose the **incorrect** option.

(1) Binding of oxygen with haemoglobin is primarily related to partial pressure of O_2.

(2) Respiratory rhythm centre is primarily responsible for the regulation of breathing.

(3) Trachea divides at the level of 5^{th} lumbar vertebrae.

(4) pCO_2 of systemic vein is 45 mmHg.

40. The partial pressure of CO_2 in tissue:

(1) is more than the alveoli.

(2) equals to the oxygenated blood.

(3) less than the deoxygenated blood.

(4) less than the atmospheric air.

41. Given below are two statements:

Statement I: The volume of air involved in breathing movements can be estimated by using a spirometer.

Statement II: Each haemoglobin molecule can carry a maximum of four molecules of O_2.

In the light of the above statements, choose the most appropriate answer from the options given below:

(1) Statement I is correct but Statement II is incorrect.

(2) Statement I is incorrect but Statement II is correct.

(3) Both Statement I and Statement II are correct.

(4) Both Statement I and Statement II are incorrect.

42. Choose the **odd** one out w.r.t simple diffusion over their body surface.

(1) Sponges

(2) Flatworms

(3) Coelenterates

(4) Birds

43. Given below are two statements: one is labelled as Assertion A and the other is labelled as Reason R:
Assertion A: Expiration is a process from which the alveolar air is released out.
Reason R: It is due to the low intra-pulmonary pressure present in the lungs.
In the light of the above statements, choose the **correct** answer from the options given below:
(1) A is true but R is false.
(2) A is false but R is true.
(3) Both A and R are true and R is the correct explanation of A.
(4) Both A and R are true but R is not the correct explanation of A.

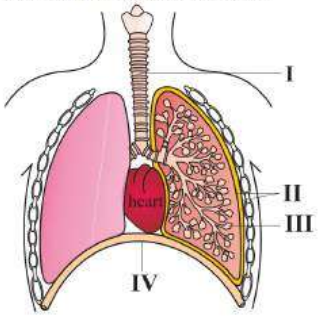
44. Which of the following **correctly** represents the lung conditions in fibrosis and emphysema respectively?
(1) Inflammation of bronchi and bronchioles and damage in alveolar wall.
(2) Proliferation of fibrous tissues and damage in alveolar wall.
(3) Damage in alveolar wall and proliferation of fibrous tissues.
(4) Damage in alveolar wall and inflammation of bronchi and bronchioles.

45. Match **List-I** with **List-II:**

List-I		**List-II**	
(A)	Inspiratory Capacity	(I)	4000-4600 ml
(B)	Expiratory Capacity	(II)	2100-2200 ml
(C)	Functional Residual Capacity	(III)	1500-1600 ml
(D)	Vital Capacity	(IV)	3000-3500 ml

Choose the **correct** answer from the options given below:
(1) A-III, B-IV, C-II, D-I
(2) A-I, B-IV, C-II, D-III
(3) A-IV, B-III, C-II, D-I
(4) A-III, B-II, C-I, D-IV

46. The diagram given below shows a view of human respiratory system with labelled **I**, **II**, **III** and **IV**. Select the **correct** option which gives correct identification and main function.



(1) I - Trachea is supported by complete cartilaginous ring.
(2) II - Pleural membrane surround ribs on both side to provide cushion against rubbing.
(3) III - Alveoli is a site for exchange of gases.
(4) IV - Diaphragm pulls it down during expiration.

47. Read the following statements (**A-E**) and select the **correct** option.
A. Pneumotaxic centre is present in the cerebellum region of brain.
B. The role of oxygen in the regulation of respiratory rhythm is quite insignificant.
C. CO_2 is 20-25 times more soluble than O_2.
D. Diaphragm increases the volume of thoracic chamber in the antero-posterior axis during inspiration.
E. About 30% CO_2 is carried by haemoglobin as carbamino-haemoglobin.
Choose the most appropriate answer from the options given below:
(1) B, C and E only (2) B, C and D only
(3) A, C and E only (4) A, B and D only

48. Which of the following factors is/are **not** favourable for the formation of oxyhaemoglobin?
(1) High partial pressure of O_2
(2) Low partial pressure of CO_2
(3) High concentration of H^+ ions
(4) Low temperature