

ETERNAL OLYMPIAD

KHETRI ROAD, NEEM KA THANA

CLASS – XI

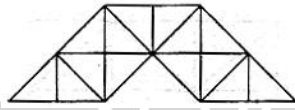
(X to XI Moving Students)

SAMPLE PAPER

This Paper contains **60 Multiple Choice Questions**. Each question has four choices (a), (b), (c) and (d) out of which **ONLY ONE** is correct.

SECTION-A (MENTAL ABILITY)

1. How many triangles are there in the following figure?



- (a) 25 (b) 20
(c) 31 (d) 29

Directions (Q.2 & Q.3) : In a school, there were five teachers. A and B were teaching Hindi and English. C and B were teaching English and Geography. D and A were teaching Mathematics and Hindi. E and B were teaching History and French.

2. Who among the teachers was teaching maximum number of subjects?

- (a) A (b) B
(c) C (d) D

3. D, B and A were teaching which of the following subjects?

- (a) English only (b) Hindi and English
(c) English and Geography (d) Hindi only

4. How many 7s immediately preceded by 6 but not immediately followed by 4 are there in the following series?

7 4 2 7 6 4 3 6 7 5 3 5 7 8 4 3 7 6 7 2 4 0 6 7 4 3

- (a) One (b) Two
(c) Four (d) Six

5. Find the next term in the series : 10, 19, 40, 77, 158, ?

- (a) 311 (b) 307
(c) 301 (d) 299

6. When the time by the watch is 20 minutes past 7, the angle between the hands of the watch is

- (a) 100° (b) 90°
(c) 80° (d) 95°

7. If 12th March 1986 was Wednesday, then 31st March 1994 would be

- (a) Wednesday (b) Thursday
(c) Friday (d) Saturday

Direction (Q.8 & Q.9) : Read the following information carefully and answer the questions given below it

(i) P, Q, R, S, T and U are six members in a family in which there are two married couples.

(ii) T, a teacher is married to the doctor who is mother of R and U.

(iii) Q, the lawyer is married to P.

(iv) P has one son and one grandson.

(v) Of the two married ladies one is a housewife.

(vi) There is also one student and male engineer in the family.

8. How is P related to R ?

- (a) Grandfather (b) Mother
(c) Sister (d) Grandmother

9. How is R related to U ?

- (a) Brother (b) Sister
(c) Brother or Sister (d) Data inadequate

10. In a game "Pass the ball" position of some players are as follows

'A' is 20 meters to the north of 'B' who is 18 meters to the east of 'C'. If the ball was initially with B and is passed to C, in which direction A is to C ?

- (a) North-East (b) North-West
(c) South-East (d) None of these

SECTION-B (PHYSICS)

11. In the table below, which planetary system has the greatest gravitational force acting between the planet and its moon?

Planetary System	Planet mass (in kg)	Moon mass (in kg)	Distance from planet (in km)
1	600×10^{22}	6×10^{22}	2×10^6
2	600×10^{22}	6×10^{22}	3×10^6
3	600×10^{22}	12×10^{22}	2×10^6
4	600×10^{22}	12×10^{22}	1×10^6

- (a) 1 (b) 2
(c) 3 (d) 4

Comprehension for (Q.No.12 to Q.No.14)

Two forces $f_1 = 20 \text{ N}$ & $f_2 = 30 \text{ N}$ are acting on an object as shown in fig.



12. The net force acting on an object is

- (a) 30 N (b) 20 N
(c) 50 N (d) 10N

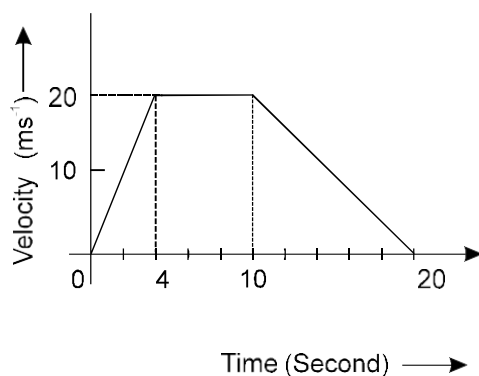
13. The direction of the net force acting on an object is

- (a) In the direction of F_1 (b) In the direction of F_2
(c) Upward (d) Downward

14. The extra force acting on an object if it is not moving here should be

- (a) 20 N (b) 30 N
(c) 10 N (d) 0 N

15. The figure represents the velocity-time graph of body moving in a straight line. How much distance does it travel during the last 10 seconds?



- (a) 40 m
(b) 80 m
(c) 100 m
(d) 220 m
16. A force of 15 N gives a mass m_1 an acceleration of 3 m/sec^2 and mass m_2 an acceleration of 5 m/sec^2 . What acceleration would it give if both the masses were tied together?
(a) 3 m/sec^2
(b) 5 m/sec^2
(c) 4 m/sec^2
(d) None of these
17. The value of universal gravitational constant
(a) Changes with change of place
(b) Does not change from place to place
(c) Becomes more at night
(d) Becomes more during the day
18. An athlete runs over a certain distance before taking a long jump, because due to this
(a) his mass gets decreased, so he can jump over a long distance
(b) he gains inertia of motion, so he can take a longer jump
(c) he gets the power of God, so he can take a longer jump
(d) he follows law of conservation of kinetic energy
19. What is the velocity of a body of mass 100 g having K.E. of 20 J ?
(a) 2 m/s
(b) 20 m/s
(c) 40 m/s
(d) None of these
20. What will be the value of acceleration due to gravity at a height $2R$ from the surface of earth ?
(a) 1.1 m/s^2
(b) 2.2 m/s^2
(c) 3.3 m/s^2
(d) 4.9 m/s^2

SECTION-C (CHEMISTRY)

21. An element "X" after reacting with acids liberate hydrogen gas and can displace Lead and Tin from their salt solution. The metal 'X' is :
(a) Copper
(b) Gold
(c) Nickel
(d) Mercury
22. Match Column-I with Column-II and select the correct answer using the code given below the columns.

	Column-I		Column-II
(A)	Hardest Non-metal	(p)	Graphite
(B)	Non-metal conducts electricity	(q)	Sulphur
(C)	Non-metal with lustre	(r)	Diamond (Carbon)
(D)	Non-metal used as fungicide	(s)	Iodine

- (a) $A \rightarrow (r)$; $B \rightarrow (p)$; $C \rightarrow (s)$; $D \rightarrow (q)$
(b) $A \rightarrow (q)$; $B \rightarrow (p)$; $C \rightarrow (s)$; $D \rightarrow (r)$
(c) $A \rightarrow (p)$; $B \rightarrow (r)$; $C \rightarrow (s)$; $D \rightarrow (q)$
(d) $A \rightarrow (r)$; $B \rightarrow (p)$; $C \rightarrow (q)$; $D \rightarrow (s)$

23. At heights if water boils at 70°C , then the cooking of pulse requires
- (a) More time and more heat (b) Less time and more heat
(c) Less time and less heat (d) More time and less heat
24. Benzene and water can be separated by
- (a) Separating funnel (b) Sublimation
(c) Filtration (d) None of these
25. In presence of water, ignition temperature of paper
- (a) Decreases (b) Increases
(c) Remains constant (d) Can decrease or increase
26. When the vapour pressure of a liquid is equal to its atmospheric pressure, then it
- (a) freezes (b) evaporates
(c) boils (d) does not undergo any change
27. Simple distillation can be best used to separate
- (a) A mixture of benzene (boiling point 80°C) and toluene (boiling point 100°C)
(b) A mixture of ether (boiling point 35°C) and toluene (boiling point 110°C)
(c) A mixture of ethanol (boiling point 78°C) and water (boiling point 100°C)
(d) None of these

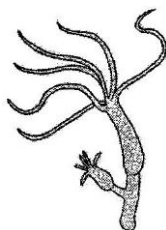
Comprehension for (Q.No. 28 to Q.No.30)

Atoms of same element containing same number of protons but different atomic masses are known as isotopes whereas atoms of different elements having same atomic mass but different atomic numbers are known as isobars. Isotopes have same chemical but different physical properties whereas isobars have different chemical properties.

28. Which of the following pairs are isotopes:
- (a) Oxygen and Ozone (b) Ice and steam
(c) Nitric oxide and nitrogen dioxide (d) Hydrogen and deuterium
29. An isotope of sodium finds application in
- (a) Detection of blood clot (b) Fuel in nuclear reactions
(c) Survey of archaeological samples (d) None of these
30. Metal oxides are
- (a) Acidic (b) Basic
(c) Neutral (d) None

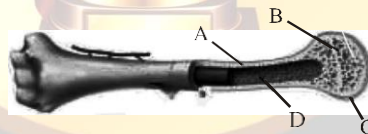
SECTION-D (BIOLOGY)

31. Identify the following organism and state to which phylum it belongs ?

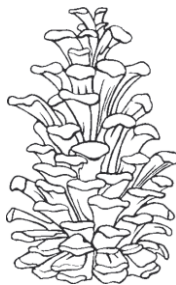


- (a) Coelenterata (b) Porifera
(c) Platyhelminthes (d) Annelida

32. Which of the following is causative agent of peptic ulcer?
- (a) *Helicobacter pylori* (b) *Leishmania*
(c) *Trypanosoma* (d) Roundworm
33. Which of the following muscle is responsible for movement of food in alimentary canal?
- (a) Smooth Muscle (b) Striated Muscle
(c) Voluntary Muscle (d) Cardiac Muscle
34. Which of these is not related to endoplasmic reticulum?
- (a) It helps in the exchange of materials between nucleus and cytoplasm.
(b) It transports material between various regions in cytoplasm.
(c) It is the site of energy generation.
(d) It is the site for some biochemical activities of the cell.
35. The process of cross breeding between two different varieties of crop plants each having a desired characteristic is known as
- (a) Selection (b) Hybridisation
(c) Emasculation (d) Introduction
36. What can a grower do to produce plants that are attractive and full of side branches?
- (a) Pinch off the apical meristem to decrease the amount of auxin.
(b) Pinch off the apical meristem to increase the amount of auxin.
(c) Pinch off the intercalary meristems to increase the amount of auxin.
(d) Pinch off the intercalary meristems to decrease the amount of auxin.
37. Crossing over that results in genetic recombination in higher organisms occurs between
- (a) Non sister chromatids of a bivalent (b) Two daughter nuclei
(c) Two different bivalent (d) Sister chromatids of a bivalent
38. Peripatus is a connecting link between
- (a) Coelenterata and Porifera (b) Ctenophora and Platyhelminthes
(c) Mollusca and Echinodermata (d) Annelida and Arthropoda
39. What type of tissue is located at the area labelled D in the diagram below ?



- (a) Compact bone (b) Spongy bone
(c) Bone marrow (d) Cartilage
40. Woody female cones, like the one shown below, and male cones grow on the same tree. In which division of seeded plants would they be found?



- (a) *Cycas* (b) *Pinus*
(c) Fern (d) *Ginkgo*

SECTION-E (MATHS)

41. A copper wire, when bent in the form of a square, encloses an area of 484 cm^2 . If the same wire is bent in the form of a circle, the radius of the circle will be
 (a) 10 cm (b) 14 cm (c) 15 cm (d) 21 cm
42. If $A : B = 2 : 3$, $B : C = 4 : 5$, and $C : D = 6 : 7$ then $A : B : C : D$ is
 (a) $16 : 22 : 30 : 35$ (b) $16 : 24 : 15 : 35$ (c) $16 : 24 : 30 : 35$ (d) $18 : 24 : 30 : 35$
43. A car travels the first $\frac{1}{3}$ of a certain distance with a speed of 10 km/h, the next one third distance with a speed of 20 km/h and last $\frac{1}{3}$ distance with a speed of 60 km/h. The average speed of the car for the whole journey is
 (a) 18 km/h (b) $24 \text{ km/h}^{\sqrt{}}$ (c) 30 km/h (d) 36 km/h
44. If $|x + 3| = 2$ and $|y+8| = 3$ then find least value of $|xy|$
 (a) 5 (b) -5 (c) 7 (d) 8
45. A rail engine is moving at a uniform speed of 30 km per hour towards a place "X". When the engine is still 20 km away from "X", an insect starts at "X" and shuttles between "X" and engine at a uniform speed of 42 km per hour. The total distance travelled by the insect, by the time engine reaches "X" is
 (a) 28 km (b) 30 km (c) 20 km (d) 42 km

Comprehension for (Q.No.46 & Q.No.47)

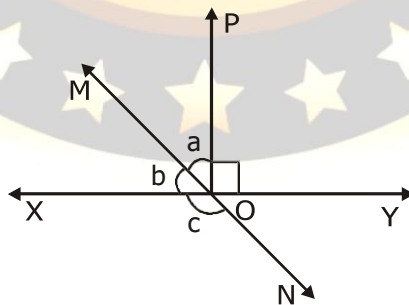
The linear equation that converts Fahrenheit ($^{\circ}\text{F}$) to Celsius ($^{\circ}\text{C}$) is given by the relation

$$C = \frac{5F - 160}{9}$$

46. If the temperature is 35°C , temperature in Fahrenheit is :
 (a) 95°F (b) 96°F (c) 98°F (d) 94°F
47. What is the numerical value of the temperature which is same in both the scales ?
 (a) 40 (b) -40 (c) 50 (d) -50

Comprehension for (Q.No. 48 & Q.No. 49)

In figure, lines XY and MN intersect at O. If $\angle\text{POY} = 90^{\circ}$ and $a : b = 2 : 3$, then



48. Measure of angle 'a' is
 (a) 54° (b) 36° (c) 126° (d) None of these
49. Measure of angle 'c' is :
 (a) 126° (b) 36° (c) 54° (d) None of these
50. If the HCF of 210 and 55 is expressible in the form $210x + 55y$. Find.
 (a) 9 (b) -19 (c) 29 (d) 39

SECTION-F (ENGLISH)

51. The students_____ extra classes for a week because the syllabus was incomplete. (take)

- (a) have been taking (b) had been taking
(c) had been taking (d) none

52. She exclaimed” Alas! He is no more.”

She exclaimed with_____that he was no more.

- (a) joy (b) sorrow
(c) surprise (d) wonder

53. I saw a boy _____ was trying to get into my office.

- (a) who (b) whom
(c) where (d) when

54. The police gave lion a reward of Rs 1000/-

He_____ a reward of Rs 1000/- by the police.

- (a) were given (b) was given
(c) is given (d) are given

55. Yes, I know him.

Frame the correct question.

- (a) Does you know him? (b) Do you know him?
(c) Did you know him? (d) None

56. Choose the correct synonym of “Scientific Test”

- (a) Idea (b) Experiment
(c) Funny (d) Opinion

57. Choose the correct antonym: ‘Remember’

- (a) Recall (b) Forget
(c) Resist (d) Nice

58. She will cook_____ food but also rice.

- (a) both (b) either
(c) not only (d) neither

59. Choose the correct question tag of the following:

Open the window,_____?

- (a) will you (b) won't you
(c) both (a) and (b) (d) none

60. A mother_____ her children.

- (a) love (b) loving
(c) loves (d) loved

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