



# ASTRONOMY

School Level Examination

GRADE

10

**DO NOT OPEN THIS BOOKLET UNTIL INSTRUCTED TO DO SO**

- \* All questions are compulsory.
- \* Read the instructions on the **ANSWER SHEET** and fill in your **NAME, CLASS and OTHER INFORMATION**.

To mark your choice of answer by darkening the circles in the Answer Sheet, use an **HB Pencil** only.

- \* You **MUST** record your answers on the **ANSWER SHEET**.
- \* There are 50 **MULTIPLE CHOICE QUESTIONS**. Use the information provided to choose the **BEST** answer among the four possible options.

On your **ANSWER SHEET** fill in the oval that matches your answer.

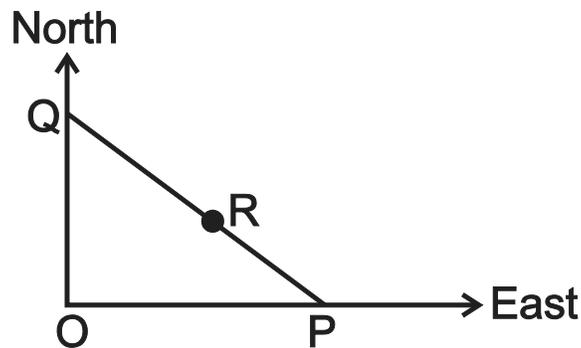
- \* Marks are **NOT** deducted for incorrect answers.
- \* Return the **Answer Sheet** to the invigilator at the end of the examination.
- \* Write your Roll No. on the Question Paper too and take it home for future reference.
- \* You are **NOT** allowed to use a calculator.

You may use a ruler and spare paper for rough work.

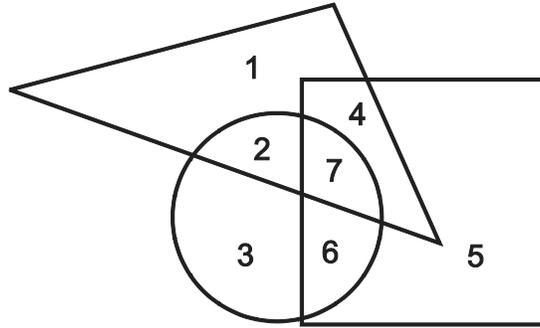
## Section - A

(This section contains 10 multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which only ONE is correct.)

1. Flood is related to River in the same way as Famine is related to \_\_\_\_? \_\_\_\_  
(A) Devastation (B) Havoc  
(C) Drought (D) Scarcity of Food
2. In a certain report, DATABASE is coded as ADATABES, How is HOMEWORK written in that code?  
(A) OHEMOWKR (B) OMWORKEH  
(C) JROWEMOH (D) WROKHMEO
3. In the given figure, P is 300 km eastward of O and Q is 400 km north of O. R is exactly in the middle of Q and P. The distance between Q and R is \_\_\_\_\_.



- (A) 250 km (B) 300 km  
(C) 350 km (D) 252 km
4. One day, Himanshu left home and cycled 10 km southwards, turned right and cycled 5 km and turned right and cycled 10 km and turned right and cycled 10 km and turned left and cycled 10 km. How many kilometres will he have to cycle to reach his home straight?  
(A) 20 km (B) 35 km  
(C) 15 km (D) 10 km
5. If TALL is equivalent to CIRCLE, ENGINEERS to TRIANGLE and INTELLECTUAL to SQUARE, indicate which number will represent INTELLECTUAL ENGINEERS:



- (A) 3 (B) 4  
(C) 5 (D) 6
6. Pick the ODD one out.  
(A) 72 (B) 12  
(C) 82 (D) 92
7. King is related to Throne in the same way as Judge is related to \_\_\_\_\_.  
(A) Trial (B) Court  
(C) Bench (D) Jailor
8. Arrange the given words in the sequence in which they occur in the dictionary and then choose the correct sequence.  
1. Sea 2. See 3. Scene 4. Senile 5. Serene  
(A) 1.,2.,3.,4.,5. (B) 3.,1.,2.,4.,5.  
(C) 5.,3.,4.,2.,1. (D) 2.,3.,5.,4.,1.
9. Piyush is taller than Aakash, but Akanksha is shorter than Piyush, Sohail is taller than Saurabh but shorter than Aakash, who among them is tallest?  
(A) Aakash (B) Akanksha  
(C) Piyush (D) Sohail
10. Find the next number in the sequence.  
2, 9, 28, 65, \_\_\_\_\_  
(A) 126 (B) 93  
(C) 125 (D) 64

### Section - B

(This section contains 25 multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which only ONE is correct.)

11. Crab Nebula consists of the remnants of a supernova which was observed by \_\_\_\_\_.
- (A) Chinese in 1054 A.D.  
 (B) Johannes Kepler and Galileo Galilei in 1604  
 (C) Tycho Brahe in 1572  
 (D) Several ancient civilizations in 236 B.C.
12. \_\_\_\_\_ is the Moon's features that was named by Copernicus.
- (A) Mountain range (B) Crater  
 (C) Rile (D) Volcano
13. In year \_\_\_\_\_, first Radio Telescope was invented.
- (A) 1935 (B) 1936  
 (C) 1937 (D) 1938
14. Fill in the blank.  
 In 1787, William Herschel discovered \_\_\_\_\_ which is a moon that revolves around Uranus.
- (A) Miranda (B) Umbriel  
 (C) Ariel (D) Titania
15. \_\_\_\_\_ is the hottest region of the Sun.
- (A) The corona (B) The core  
 (C) The chromosphere (D) The photosphere
16. Which of the following is the process through which energy is transferred from Sun to Earth?
- (A) Molecular collisions (B) Density currents  
 (C) Electromagnetic waves (D) Red shifts
17. Which of the following is termed as the dense loop-like structures that are embedded within the corona of the Sun but are cooler?
- (A) Loops (B) Chondrules  
 (C) Prominences (D) Coronal mass ejections
18. The angular diameter that the full moon takes up in the night sky is equal to \_\_\_\_\_.
- (A)  $\frac{1}{8}$  degree (B)  $\frac{1}{2}$  degree

- (C) 2 degrees (D) 1 degree
19. \_\_\_\_\_ is the only planet that cannot be seen with the unaided eye.
- (A) Neptune (B) Mars  
(C) Saturn (D) Jupiter
20. What is the reason behind the fact that the cycle of moon's phases can be seen from Earth?
- (A) Moon's distance from Earth changes at a predictable rate.  
(B) Moon's axis is tilted.  
(C) Moon spins on its axis.  
(D) Moon revolves around the Earth.
21. A comet's tail points always \_\_\_\_\_.
- (A) Behind the comet in its orbit (B) Towards the Earth  
(C) Towards the Sun (D) Away from the Sun
22. In 2015, GSAT-15 was launched that consisted of communication transmitters. Which space agency launched it?
- (A) NASA (B) JAXA  
(C) ROSCOSMOS (D) ISRO
23. Read the statements about the phases of Moon.
- (i) The Moon appears half lit and half dark.  
(ii) The Moon is at quadrature  $90^\circ$  East of Sun.  
(iii) It occurs approximately 7 days after new moon.
- Which particular phase of Moon is discussed here?
- (A) First quarter (B) Waning gibbous  
(C) Waxing gibbous (D) Last quarter
24. \_\_\_\_\_ satellite is drawing a map of the boundary between the Solar System and interstellar space.
- (A) Voyager 1 (B) IBEX  
(C) Voyager 2 (D) Cassini-Huygens
25. Which of the following explains the basic difference between ultraviolet, visible, and infrared radiations?
- (A) Rate constant (B) Temperature

- (C) Wavelength (D) Half life
26. The light-gathering power of a reflecting telescope depends on \_\_\_\_\_.
- (A) The ratio of the focal lengths of objective and eyepiece  
(B) The area of its objective mirror  
(C) Focal length of its objective mirror  
(D) Focal length of its eyepiece
27. Where is the visual aurora located that consists of luminous arcs, rays or bands in the night sky, usually confined to high latitudes?
- (A) Mesosphere (B) Stratosphere  
(C) Lithosphere (D) Ionosphere
28. Which of the following is the hottest terrestrial planet?
- (A) Mercury (B) Venus  
(C) Earth (D) Mars
29. Which of the following statement is CORRECT about the mass of Jupiter?
- (A) It is equal to the combined masses of the Earth and Mars.  
(B) It is equal to the combined masses of Saturn and Mercury.  
(C) It is equal to the combined masses of Saturn, Neptune and Uranus.  
(D) It is greater than the combined masses of all the planets.
30. Why Mercury and Venus are referred as the 'inferior planets'?
- (A) Their orbits are inside of the Earth's orbit.  
(B) Their orbits are slower than the Earth's orbit.  
(C) Their orbits are faster than the Earth's orbit.  
(D) They are smaller than the other planets that circle the Sun.
31. Van Allen belts are \_\_\_\_\_.
- (A) Caused by precession  
(B) Caused by the Earth's Magnetic field.  
(C) Caused by the reflection of polar snow.  
(D) Radiation belts surrounding the Earth.
32. The determination of stellar parallax leads to the determination of \_\_\_\_\_ of nearby objects in space.
- (A) Mass (B) Diameter

- (C) Distance (D) Velocity
33. Which of the following is the largest moon of Saturn?  
(A) Ganymede (B) Europa  
(C) Titan (D) Mimas
34. Which of the following is the correct term for Ursa Major and Capricornus?  
(A) Black holes (B) Galaxies  
(C) Constellations (D) Asteroids
35. Which of the following reasons explains the occurrence of magnetic field on celestial bodies like Earth or a star?  
(A) The Dynamo effect (B) The Doppler effect  
(C) The Photoelectric effect (D) Its rotation about its axis

### Section - C

**(This section contains 10 multiple choice questions. Each question has four choices (A), (B), (C) and (D), out of which TWO are correct.)**

36. Which of the following are the contributions of Charles Messier to the astronomy?  
(A) He discovered asteroids. (B) He discovered Pluto.  
(C) He was a comet hunter. (D) He catalogued deep sky objects.
37. Choose the correct statements about the Solar Energy.  
(A) Every day, plants convert sunlight into energy equivalent to 6 times the world's energy consumption.  
(B) Sunlight is a perishable source of energy.  
(C) According to the inventor Ray Kurzweil, all of the world's energy requirement can be met with just 1/10000 sunlight that falls upon Earth each day.  
(D) Present day solar cells can convert 60% sunlight falling on it into energy.
38. Which of the following statements are correct about the Sun?  
(A) Sun is a middle-aged star.  
(B) Sun is a young star.  
(C) The rotation of sun is anti-clockwise.  
(D) All of these
39. \_\_\_\_\_ and \_\_\_\_\_ are the active rovers missions on Mars.

- (A) Spirit (B) Opportunity  
(C) Curiosity (D) Sojourner
40. \_\_\_\_\_ and \_\_\_\_\_ are the space missions that are exploring heliospheres presently.
- (A) Voyager 1 (B) Solar Dynamics Observatory  
(C) Voyager 2 (D) SOHO
41. \_\_\_\_\_, northern lights can be seen from Alaska.
- (A) During the time of equinox  
(B) During the time of solstice  
(C) When charged particles of space interact with Earth's magnetic field  
(D) When the eclipse is near
42. A high tide can occur during \_\_\_\_\_ or \_\_\_\_\_.
- (A) Gibbous Phase of Moon (B) Crescent Phase of Moon  
(C) Full Moon (D) New Moon
43. Pick the correct statements about the Moon.
- (A) Moon has a dynamic surface.  
(B) In the sky of moon, the stars don't twinkle.  
(C) The sky on the moon appears black during the day.  
(D) Moon's atmosphere consists of carbon dioxide.
44. Which of the following statements are TRUE?
- (A) Kuiper belt lie outside the orbit of Neptune.  
(B) Pleiades is also known as Seven Sisters.  
(C) Out of all planets, Neptune has the greatest density.  
(D) Ganyemede is the name of the comet.
45. The equatorial circumference of the Neptune is 4 times of the Earth. Select the true statements about Neptune.
- (A) If we have to go around the equator of Neptune in a car at the speed of 70 km/hour, it will take 400 hours.  
(B) Equatorial circumference is 1,55,600 km.  
(C) If we have to go around the equator of Neptune in a car at a speed of 97 km per hour, it will take 1600 hours.  
(D) Equatorial circumference of Earth is 5000 km.

46. Pick the CORRECT statements about the planet Venus.
- (A) An year on Venus is longer than Earth's year.
  - (B) Venus appears orange in colour during Venus transit.
  - (C) During Venus transit, it appears on the Sun as a black spot.
  - (D) When we observe Venus by telescope, it makes phases.
47. Which among the following are the examples of emission nebula?
- (A) Horsehead nebula
  - (B) Orion nebula
  - (C) Coal Sack nebula
  - (D) Lagoon nebula
48. Which of the following statements are correct about Exoplanets?
- (A) Outer planets
  - (B) Planets in other solar systems
  - (C) Inner planets.
  - (D) Light years away
49. Select the INCORRECT statement about the inner planet Mercury.
- (A) In comparison to Venus transit, Mercury transit is more frequent.
  - (B) On observing Mercury with a telescope one can observe that it makes phases.
  - (C) The closest planet to the Earth is Venus, not Mercury.
  - (D) The farthest planet to the Earth is Mercury.
50. Parhelion is an atmospheric phenomenon formed by the refraction of sunlight by ice crystals suspended high in the atmosphere. What are the other names suggested for Parhelion?
- (A) Mock Sun
  - (B) Sun Deer
  - (C) Double Sun
  - (D) Sun Dog

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