# SCIENCE OLYMPIAD : THE UNIVERSE
## SAMPLE PAPER FOR GRADE 3 – GRADE 4

1. What is gravity?
   A) A force that pulls objects towards each other
   B) A force that pushes objects away from each other
   C) A force that makes objects float in space
   D) A force that makes objects move sideways

2. Who discovered gravity?
   A) Isaac Newton
   B) Albert Einstein
   C) Galileo Galilei
   D) Nikola Tesla

3. What causes gravity?
   A) The spinning of the Earth
   B) The rotation of the Moon
   C) The mass of an object
   D) The heat of the Sun

4. Which of the following has more gravity?
   A) A small rock
   B) A large mountain
   C) A feather
   D) A basketball

5. What would happen if there was no gravity on Earth?
   A) Everything would float away
   B) Everything would fall to the ground
   C) Nothing would change
   D) The Earth would stop spinning

6. What keeps the planets in our solar system orbiting around the Sun?
   A) Magnetism
   B) Gravity
   C) Heat

D) Light

7. Why do objects fall to the ground when dropped?
A) Because of magnetism
B) Because of air resistance
C) Because of gravity
D) Because of heat

8. What does the strength of gravity depend on?
A) The size of the object
B) The distance between objects
C) The color of the object
D) The temperature of the object

9. Which of the following will fall to the ground first when dropped from the same height?
A) A feather
B) A rock
C) A leaf
D) A paperclip

10. Why do astronauts float in space?
A) Because there is no air in space
B) Because there is no gravity in space
C) Because they have wings
D) Because they have special boots

11. Why do objects have weight?
A) Because of their mass
B) Because of their color
C) Because of their shape
D) Because of their speed

12. Which planet has the strongest gravity in our solar system?
A) Earth
B) Mars
C) Jupiter
D) Mercury

13. Which of the following affects the strength of gravity between two objects?
A) The speed of the objects
B) The mass of the objects
C) The color of the objects
D) The temperature of the objects

14. What happens to gravity as you move away from a planet?
A) It gets stronger
B) It stays the same
C) It gets weaker
D) It disappears

15. What happens to gravity as you move closer to a planet?
A) It gets stronger
B) It stays the same
C) It gets weaker
D) It disappears

16. What happens when a protostar becomes hot enough to start nuclear fusion?
A) It becomes a red giant
B) It becomes a white dwarf
C) It becomes a main sequence star
D) It becomes a supernova

17. What is nuclear fusion?
A) The process of combining atoms to release energy
B) The process of splitting atoms to release energy
C) The process of absorbing energy from the sun
D) The process of cooling down a star

18.How do stars produce energy?
A) By burning fuel
B) By absorbing light
C) By reflecting heat
D) By emitting sound

19. What color are most main sequence stars?
A) Blue B) Red C) Yellow D) Green

20. What happens when a main sequence star runs out of hydrogen fuel?
A) It becomes a red giant
B) It becomes a white dwarf
C) It explodes in a supernova
D) It collapses into a black hole

21. What is a red giant?
A) A young star still forming
B) A star at the end of its life
C) A type of galaxy
D) A star with a stable core

22. What happens to a red giant after it expands?
A) It collapses into a black hole
B) It becomes a white dwarf
C) It explodes in a supernova
D) It becomes a neutron star

23. What is a white dwarf?
A) A young star still forming
B) A star at the end of its life
C) A type of galaxy
D) A star with a stable core

24. What happens to a white dwarf over time?
A) It cools down and fades away
B) It collapses into a black hole
C) It explodes in a supernova
D) It becomes a neutron star

25. What is a supernova?
A) A young star still forming
B) A star at the end of its life
C) A type of galaxy
D) A star with a stable core

26. What is left behind after a supernova explosion?
A) Black hole
B) Neutron star

C) White dwarf
D) Red giant

27. What is a neutron star?
A) A young star still forming
B) A star at the end of its life
C) A type of galaxy
D) A star with a stable core

28. What happens if a star is very massive when it dies?
A) It becomes a white dwarf
B) It becomes a neutron star
C) It collapses into a black hole
D) It explodes in a supernova

29. How long does a star stay in the main sequence stage of its life cycle?
A) Millions of years
B) Billions of years
C) Trillions of years
D) Hundreds of years

30. What happens to a star after it leaves the main sequence stage?
A) It becomes a white dwarf
B) It becomes a neutron star
C) It collapses into a black hole
D) It explodes in a supernova

31. What determines the path a star takes in its life cycle?
A) Its size
B) Its color
C) Its distance from other stars
D) Its age

32. What is a black hole?
A) A region of space where gravity is so strong that nothing can escape
B) A type of galaxy
C) A young star still forming
D) A star at the end of its life

33. How does a black hole form?

A) By collapsing of a massive star
B) By colliding with another star
C) By absorbing light from other stars
D) By cooling down a white dwarf

34. What happens to light that enters a black hole?
A) It gets brighter
B) It gets dimmer
C) It gets absorbed
D) It gets reflected

35. Which planet is known as the "evening star"?
A) Mercury B) Venus C) Mars D) Jupiter

36. Which planet is known as the "morning star"?
A) Mars B) Venus C) Saturn D) Neptune

37. What is the name of Earth's natural satellite?
A) Moon B) Mars C) Sun D) Jupiter

38. How many planets are there in our solar system?
A) 8 B) 10 C) 5 D) 12

39. Which planet is known as the "blue gas giant"?
A) Saturn B) Uranus C) Neptune D) Venus

40. Which planet is known for its large red spot?
A) Jupiter B) Mars C) Venus D) Mercury

41. Which planet is known for its beautiful blue color?
A) Jupiter B) Saturn C) Uranus D) Neptune

42. Which is the hottest planet in our solar system?
A) Mercury B) Venus C) Mars D) Earth

43. Which is the coldest planet in our solar system?
A) Earth B) Mercury C) Mars D) Neptune

44. Which is the closest planet to Earth?
A) Mars B) Jupiter C) Venus D) Saturn

45. Which is the second planet from the Sun?
A) Earth B) Mars C) Venus D) Mercury

46. Which is the third planet from the Sun?
A) Earth B) Mars C) Venus D) Mercury

47. Which planet is known for its beautiful rings made of ice particles?
A) Jupiter B) Saturn C) Uranus D) Neptune

48. Which planet is known for its bright, red surface?
A) Venus B) Mars C) Jupiter D) Saturn

49. Which planet is known as the "Red Planet"?
A) Venus B) Mars C) Mercury D) Earth

50. What celestial event occurs when the Moon passes between the Sun and the Earth, blocking out the Sun's light?
A) Solar eclipse
B) Lunar eclipse
C) Comet
D) Meteor shower

51. What celestial event occurs when the Earth passes between the Sun and the Moon, casting a shadow on the Moon?
A) Solar eclipse
B) Lunar eclipse
C) Comet
D) Meteor shower

52. How often does a solar eclipse occur?
A) Every month
B) Once a year
C) Every few years
D) Every few decades

53. What is a meteor shower?
A) A rainstorm on another planet
B) A shower of meteors entering the Earth's atmosphere
C) A comet passing close to Earth

D) A lunar eclipse

54. What causes a meteor shower?
A) The Earth passing through the tail of a comet
B) The Sun passing through the tail of a comet
C) The Moon passing through the tail of a comet
D) The Earth passing through a cloud of dust

55. When is the best time to observe a meteor shower?
A) During the day
B) During a lunar eclipse
C) At night, away from city lights
D) During a solar eclipse

56. What is a comet?
A) A planet orbiting the Sun
B) A star with a tail
C) A small celestial object made of ice and dust
D) A large asteroid

57. What is the name of the celestial event that occurs when a comet enters the inner solar system?
A) Supernova
B) Solar eclipse
C) Comet
D) Meteor shower

58. What causes the tail of a comet to form?
A) The heat of the Sun melting the comet's surface
B) The gravitational pull of the planets
C) The solar wind blowing gas and dust away from the comet
D) The comet colliding with other celestial objects

59. What is a supernova?
A) A comet passing close to Earth
B) A meteor shower
C) A massive explosion of a star
D) A lunar eclipse

60. How are supernovae important to astronomers?

A) They create new stars
B) They produce black holes
C) They release energy and elements into space
D) They cause solar eclipses