

MENTAL ABILITY

1. Find the missing term:

(ABC) – 6, (DEF) – 15, (GHI) – 24, ?

- (1) (KLM) – 34
- (2) (JKM) – 33
- (3) (LKJ) – 33
- (4)* (JKL) – 33

2. A meaningful word starting with A is made from the first, the second, the fourth, the fifth and sixth letters of the word **CONTRACT**, which of the following is the middle letter of the word?

- (1) C
- (2)* T
- (3) O
- (4) R

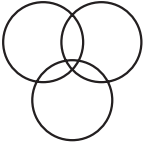



3. If Anil is the brother of the son of Sunil's son, what is the relationship between Anil and Sunil?

- (1) Cousin
- (2) Brother
- (3) Nephew
- (4)* Grandson

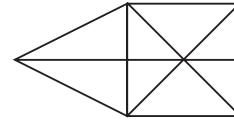
4. One evening before sunset two friends Amit and Sunil were talking to each other face to face. If Sunil's shadow was exactly to his left side, which direction was Amit facing?

- (1)* North
- (2) South
- (3) West
- (4) East

5. Select the diagram that best represents the given relationship: Clever, Punctual, Poor

- (1)* 
- (2) 
- (3) 
- (4) 

6. How many triangles does the figure have?



- (1) 15
- (2) 16
- (3)* 17
- (4) 18

7. In a code language **DRAMA** is coded as **37** and **STAGE** as **52**, then how is **ACTOR** written in the same code language?

- (1) 56
- (2) 50
- (3)* 57
- (4) 67

8. Arrange the following in meaningful sequence:

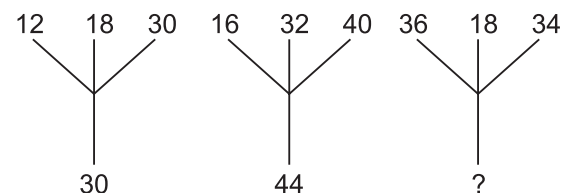
- 1. Child
- 2. Job
- 3. Marriage
- 4. Infant
- 5. Education

- (1) 1, 3, 5, 2, 4
- (2) 3, 5, 2, 1, 4
- (3) 4, 1, 3, 5, 2
- (4)* 4, 1, 5, 2, 3

9. PALE : LEAP :: POSH : ?

- (1) HSOP
- (2) POHS
- (3)* SHOP
- (4) SHPO

10. Fill the missing term:



- (1) 48
- (2) 9
- (3)* 44
- (4) 64

SPACE SCIENCE

11. At north or south poles sun does not rise or set to almost about
- (1) a year
 - (2)*half a year
 - (3) one month
 - (4) two years
12. Planets Venus, Mars, Jupiter and Saturn at night can be seen with a
- (1)*naked eye
 - (2) microscope
 - (3) telescope
 - (4) binoculars
13. Asteroid belt is present between Mars and Jupiter and is made up of
- (1) gases
 - (2) stone
 - (3)*rocks
 - (4) water
14. From total mass of solar system total mass of sun by percentage is
- (1)*99%
 - (2) 45%
 - (3) 90%
 - (4) 10%
15. Huge explosions over Sun's surface are known as
- (1) sun flares
 - (2)*solar flares
 - (3) solar explosions
 - (4) prominence
16. Approximate number of galaxies in Universe is
- (1) 100,000
 - (2)*100,000 million
 - (3) 100,000 billion
 - (4) 100,000 trillion
17. Comet tail is made up of charged particles called
- (1) electrons
 - (2) protons
 - (3) neutrons
 - (4)*ions
18. Eclipses do not occur every month because moon's orbit is
- (1) round
 - (2)*tilted
 - (3) straight
 - (4) angled
19. Approximately how large must a meteoroid be in order to survive passage through the atmosphere and reach the ground as a meteorite?
- (1)*As big as a fist
 - (2) As big as a penny
 - (3) As big as a automobile
 - (4) As big as a house
20. Which of the following best describes the material which makes up the nucleus of a comet?
- (1) Rocky
 - (2) Gaseous
 - (3)*Dirty ice
 - (4) Metallic crystals
21. The particles which produce meteor showers come from
- (1) impacts of meteoroids with the moon
 - (2)*dead comets
 - (3) collisions of asteroids with each other
 - (4) interstellar space

22. What is the Oort cloud?
- (1) A cluster of asteroids
 - (2)*A swarm of comets far from the sun
 - (3) The cloud that a meteoroid produces in the atmosphere
 - (4) The same as the coma of a comet
23. To explore planets Jupiter and Saturn space probes were launched namely
- (1) voyager 1
 - (2) voyager 2
 - (3)*both (1) and (2)
 - (4) voyager x
24. In irregular galaxies, quantity of gases and dust is
- (1) zero
 - (2)*more than the stars
 - (3) more than the size of galaxy
 - (4) less than the stars
25. One Jupiter day is equal to which of the following?
- (1) 30 hrs 40 min
 - (2)*9 hrs 50 min
 - (3) 3 hrs 20 min
 - (4) 8 hrs 40 min
26. About how many light years across is the Milky Way?
- (1) 1,000
 - (2) 10,000
 - (3)*100,000
 - (4) 200,000
27. A comet's tail points in which direction?
- (1) Toward the sun
 - (2) Toward the earth
 - (3)*Away from the sun
 - (4) Away from the earth
28. What percentage of the Sun's mass has been converted to energy?
- (1) 1%
 - (2) 2%
 - (3) .001%
 - (4)*0.7%
29. Which of these spacecrafts was not sent to Saturn?
- (1)*Pioneer 10
 - (2) Pioneer 11
 - (3) Voyager 2
 - (4) Voyager 1
30. The same pattern of solar eclipses will repeat every 18 years 11 days 8 hours. This is known as _____.
- (1) Mayan Cycle
 - (2) Hedes Cycle
 - (3)*Saros Cycle
 - (4) All of these
31. Who was the first man to classify stars according to their brightness?
- (1) Pythagorus
 - (2) Copernicus
 - (3)*Hipparchus
 - (4) Both (1) and (2)
32. From stage of red supergiant to Sun's center, it will take approximately
- (1) 10 years
 - (2) thousands of years
 - (3)*millions of years
 - (4) zillions of years
33. Stars in a spiral galaxy are
- (1)*old-age, middle-age and young
 - (2) yellow stars, blue giants, red supergiants
 - (3) orange stars, red giants, blue supergiant
 - (4) dwarfs, giants and supergiants

34. The following planet takes maximum time for one spin on its axis
- (1) Venus
 - (2)*Mercury
 - (3) Saturn
 - (4) Uranus
35. Satellite closest to the parent planet is
- (1) Moon
 - (2)*Phobos
 - (3) Titan
 - (4) Enceladus
36. To explore Mars planet in 2004 there were Martian surface explored by safely landing of
- (1)*rovers
 - (2) satellites
 - (3) voyager
 - (4) space probe
37. What asteroid was the focus of the NEAR spacecraft?
- (1) IO
 - (2) Gaspra

- (3)*Eros
 - (4) All of these
38. How long could a long-period comet take to orbit around the Sun?
- (1) 100 million years
 - (2)*30 million years
 - (3) 1200 million years
 - (4) 80 million years
39. Which planet is Olympus Mons, the highest volcano in the Solar System, on?
- (1)*Mars
 - (2) Mercury
 - (3) Venus
 - (4) Neptune
40. It takes the Sun 225-250 million years to do one revolution of the Milky Way Galaxy. How fast does the Sun travel?
- (1)*220 km in a second
 - (2) 220 km in a minute
 - (3) 220 km in a hour
 - (4) 220 km in a year

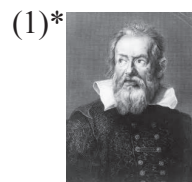
INTERACTIVE SECTION

41. Ulysses reached Sun in

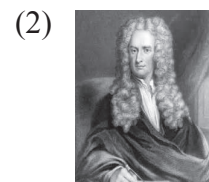


- (1) 1991
- (2) 1992
- (3) 1993
- (4)* 1994

42. A person who discovered craters on moon was the



Galileo



Isaac Newton

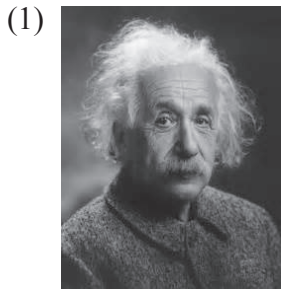


Edwin Hubble

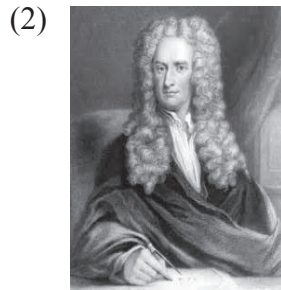


Johannes Kepler

43. Person who proved existence of galaxies beyond milky way was the



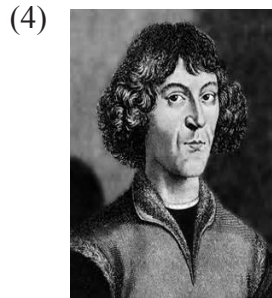
Albert Einstein



Isaac Newton



Edwin Hubble



Copernicus

44. Space probe which discovered craters on moon was

- (1) Voyager
- (2) Pioneer
- (3)*Clementine
- (4) Venera

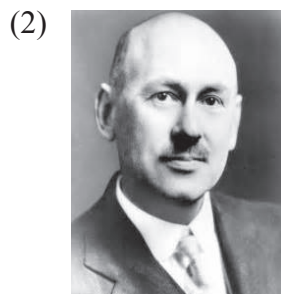
45. In 1966 first space probe which landed on moon was

- (1) Luna 1
- (2)* Luna 9
- (3) Sputnik 1
- (4) Terra 1

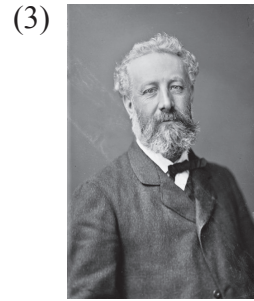
46. A person who proposed sending machines in space was



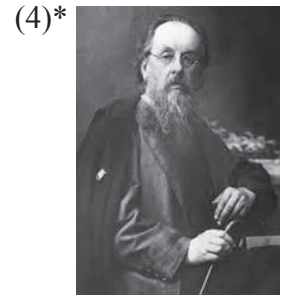
Yuri Gagarin



Robert Goddard



Jules Verne



Konstantin
Tsiolkovsky

47. Ancestor of all modern rockets is

- (1) V-1
- (2)*V-2
- (3) Titan
- (4) Delta

48. An American agency, NASA, launched a Solar Laboratory in

- (1) 2000
- (2) 2006
- (3)*2010
- (4) 1998

49. By Sirius B, Sirius A is orbited every

- (1) 30 years
- (2) 40 years
- (3)*50 years
- (4) 60 years

50. World's most famous telescope is

- (1) Spitzer Space Telescope
- (2) Fermi Gamma-Ray Space Telescope
- (3) Arecibo Telescope
- (4)*Hubble Telescope

51. Average distance between each star is about

- (1) 2 light years
- (2) 3 light years
- (3) 4 light years
- (4)* 5 light years

52. Payload of Titan IV was
- (1) 1400 kg
 - (2) 1770 kg
 - (3)*18000 kg
 - (4) 29500 kg
53. At 10 million light years galaxies visible are the
- (1) Comet
 - (2) Debris
 - (3) Andromeda galaxy
 - (4)*Local group
54. What is the comet belt outside of Pluto's orbit called?
- (1) Oort Cloud
 - (2)*Kuiper Belt
 - (3) Asteroid Belt
 - (4) Both (1) and (2)
55. Which statement describes the atmosphere of the planet correctly?
- (1) Venus is mostly carbon dioxide
 - (2)*Mercury is mostly nitrogen
 - (3) Earth is mostly oxygen
 - (4) Saturn is mostly helium
56. To weigh roughly two-thirds less than what you do on Earth, which planet would you be on?
- (1) Uranus
 - (2)*Mars
 - (3) Venus
 - (4) Jupiter
57. First artificial satellite was built by soviets in 1957 and its name was the
- (1) Hubble space
 - (2) Space probes
 - (3)*Sputnik 1
 - (4) Voyager 1
58. Sirius can be seen from the
- (1) mid-southern latitude
 - (2)*mid-northern latitude
 - (3) equator
 - (4) south pole
59. A white dwarf, that is a size of earth has a mass equal to that of
- (1) Moon
 - (2)*Sun
 - (3) Jupiter
 - (4) Saturn
60. By observing Sunspots, scientists found that different parts of Sun take different lengths of time to
- (1) blast
 - (2)*cool down
 - (3) rotate
 - (4) heat up

* denotes answer.



END OF THE EXAM