

# MENTAL ABILITY

1. Find the missing term in the given number series:  
8, 7, 16, 5, 32, 3, 64, 1, 128, (?)

- (1) 18                      (2) 13  
(3)\*-1                      (4) 3

2. Find the wrong term in the given number series:  
3, 7, 9, 28, 27, 84, 81, 448, 243

- (1)\*84                      (2) 81  
(3) 28                      (4) 7

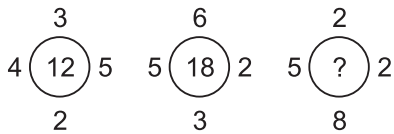
3. This question consists of four groups. One set is different from other three in some way. Find out the different set:

- (1) GEDC                      (2)\* AZYX  
(3) PNML                      (4) USRQ

4. In the following question there is a letter series with one term missing shown by (?). Find this term.  
DOZ, GRC, (?), ALW, BMX

- (1) BGL                      (2)\* LWH  
(3) DLT                      (4) GJM

5. In the question one of the circle has a (?) mark inside it. Choose the correct answer to fill in the space marked (?) from the given alternatives.



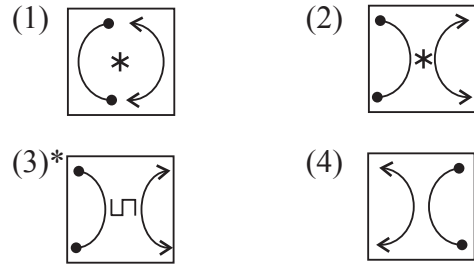
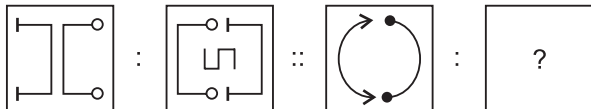
- (1) 12                      (2) 14  
(3)\*16                      (4) 20

6. Fill the left blank.

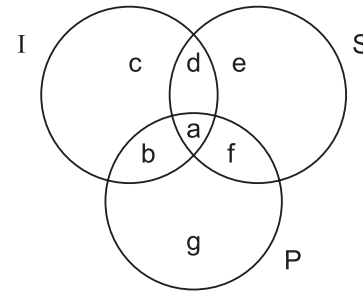
- (1)\*8  
(2) 11  
(3) 14  
(4) 15

4	9	20
8	5	14
10	3	?

7. Find the missing one from the given alternative.



8. In the following diagram “I” represents Indians, ‘S’ represents Scientists and ‘P’ represents Politicians.



Indians those are politicians but not scientist will be

- (1) a                      (2)\* b  
(3) d                      (4) f

9. In the following question some relations are written by particular indicators as shown below –

- × = Greater than  
□ = Not less than  
÷ = Not equal to  
∅ = Equal to  
+ = Not greater than  
Δ = Less than

Find out the correct answer.

If  $x \Delta y \div z$  it is not possible -

- (1)\*  $x \div y \emptyset z$                       (2)  $x + y \times z$   
(3)  $x \div y \times z$                       (4)  $x \Delta y \square z$

10. In a coded language TAKE = 1790, PLOT = 5321 then code for PLATE will be

- (1) 52701                      (2) 53071  
(3) 35710                      (4)\* 53710

# SPACE SCIENCE

- 11.** The star that lies close to the axis of rotation of the earth
- (1)\*The Pole Star
  - (2) Ursa Major
  - (3) Ursa Minor
  - (4) Cassiopeia
- 12.** \_\_\_\_\_ was launched in the honour of Kalpana Chawla, a space scientist of Indian origin, who died in mishap in a space vehicle.
- (1)\*INSAT-3E
  - (2) INSAT-3D
  - (3) INSAT-1A
  - (4) INSAT-IID
- 13.** Ursa Major moves around the \_\_\_\_\_.
- (1) Sun
  - (2) Earth
  - (3) Moon
  - (4)\*Pole Star
- 14.** Pluto was discontinued to be regarded as planet in 2006 due to its
- (1) dwarf size
  - (2) unusual orbit
  - (3)\*both (1) and (2)
  - (4) rotation
- 15.** Dark Matter filled between space in galaxies is called
- (1)\*intergalactic space
  - (2) inter planets space
  - (3) air space
  - (4) interstitial space
- 16.** Rotation of Uranus is
- (1) prograde
  - (2)\*retrograde
  - (3) both (1) and (2)
  - (4) north to south
- 17.** Galilean satellites are moons of
- (1) Mars
  - (2) Venus
  - (3) Saturn
  - (4)\*Jupiter
- 18.** During annular eclipse earth and moon are
- (1) closer
  - (2)\*farther apart
  - (3) opposite
  - (4) alike
- 19.** Phobos and Deimos are moons of planet
- (1)\*Mars
  - (2) Venus
  - (3) Saturn
  - (4) Jupiter
- 20.** A storm system on Jupiter which is three times bigger than earth is the
- (1)\*Great red spot
  - (2) Cassini
  - (3) Great dark spot
  - (4) Great orange spot
- 21.** Asteroids include
- (1) Hektor
  - (2) Ceres
  - (3) Vesta
  - (4)\*All of them

22. Light of proxima centauri reaches earth in time period of
- (1) 4 years
  - (2)\*4.2 years
  - (3) 2 years
  - (4) 365 days
23. The coldest planet in the solar system is
- (1) Pluto
  - (2) Venus
  - (3)\*Uranus
  - (4) Jupiter
24. Which of the following planets has a revolution time which is shorter than its rotation time?
- (1) Jupiter
  - (2)\*Venus
  - (3) Mars
  - (4) Uranus
25. Which planet looks reddish in the night sky?
- (1) Jupiter
  - (2) Saturn
  - (3)\*Mars
  - (4) Mercury
26. The planet that lies at the outermost orbit of the solar system is:
- (1) Saturn
  - (2)\*Neptune
  - (3) Mercury
  - (4) Uranus
27. Which of the following planets is named after a Greek God, unlike others which are named after Roman Gods?
- (1)\*Uranus
  - (2) Neptune
  - (3) Jupiter
  - (4) Mercury
28. Which planet has the fastest revolution time?
- (1)\*Mercury
  - (2) Uranus
  - (3) Neptune
  - (4) Jupiter
29. What is the average distance (approximate) between the Sun and the Earth?
- (1)  $70 \times 10^5$  km
  - (2)  $100 \times 10^5$  km
  - (3)  $110 \times 10^6$  km
  - (4)\* $150 \times 10^6$  km
30. NASA's Deep Impact space mission was employed to take detailed pictures of which comet nucleus?
- (1) Halley's Comet
  - (2) Hale-Bopp
  - (3) Hyakutake
  - (4)\*Tempel 1
31. Storms of gases are visible in the chromospheres of the Sun during
- (1) Cyclones
  - (2) Anticyclones
  - (3) Lunar eclipse
  - (4)\*Solar eclipse
32. If you look outside at night to see a galaxy it is
- (1) very easy because of their shape
  - (2)\*very hard because they look like stars
  - (3) very hard because they are invisible
  - (4) very easy because of their color
33. Jupiter has a thick atmosphere of \_\_\_\_\_ which reflects most of the sunlight falling on it.
- (1) Oxygen
  - (2) Helium
  - (3) Nitrogen
  - (4)\*Hydrogen

34. The planet also known as morning star is \_\_\_\_\_

- (1) Mars
- (2) Mercury
- (3) Jupiter
- (4)\* Venus

35. Meteors are commonly known as

- (1) Comets
- (2) Stars
- (3) Asteroids
- (4)\*Shooting stars

36. The un-burnt piece of meteor which reaches the surface of the earth is

- (1) Celestial bodies
- (2)\*Meteorites
- (3) Comets
- (4) Stars

37. A system which is made up of sun, moon, planets, asteroids and other objects which orbit sun is known as

- (1) lunar system
- (2) space

(3)\*solar system

(4) galaxy

38. Natural satellites of planets are

- (1)\*moons
- (2) sun
- (3) spacecraft
- (4) hover crafts

39. Chiron is the largest \_\_\_\_\_ in the Universe.

- (1)\*Comet
- (2) Asteroid
- (3) Meteoroids
- (4) Dwarf planet

40. Temperature of Sun is

- (1) 7000°C
- (2) 8000°C
- (3)\*6000°C
- (4) 9000°C

## INTERACTIVE SECTION

41. Rank of earth as per size is

- (1) fourth
- (2)\*fifth
- (3) sixth
- (4) seventh

42. Rhea is the fifth natural satellite of

- (1) Mercury
- (2) Venus
- (3)\*Saturn
- (4) Neptune

43. The largest crater on the surface of moon is called

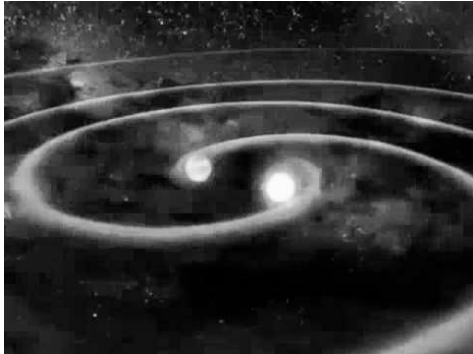
- (1)\*Bailly
- (2) Tycho
- (3) Plato
- (4) Davy

44. What is a spring tide?

- (1) A tide that occurs when the difference between highest and lowest tides is the least.
- (2)\*A tide that occurs when the difference between highest and lowest tides is the most.
- (3) A tide that occurs every 100 years.
- (4) A tide that occurs whenever there is a full moon three months in a row.

45. A space spinoff is
- (1) When 2 spaceships spin in space
  - (2)\*Something developed for use in space that has uses on Earth
  - (3) Something developed for use on Earth that has uses in space
  - (4) When a spacecraft crashes before entering orbit

46. A binary star is a star system consisting of



- (1) four stars
  - (2) three stars
  - (3)\*two stars
  - (4) one star
47. Which Russian astronaut became the first person to be married in space, while he was on the International Space Station?



Yuri Gidzenko



Yuri Malenchenko



Sergei K. Krikalev

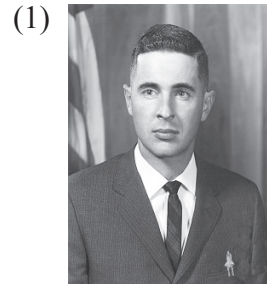


Vladimir Dezhurov

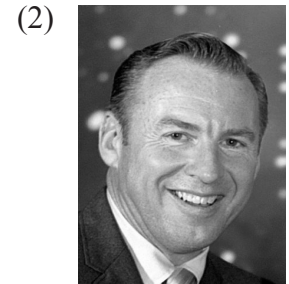
48. The crew of which Apollo mission spent the longest time on the Lunar surface?

- (1) Apollo 7
- (2)\* Apollo 17
- (3) Apollo 12
- (4) Apollo 9

49. Along with Neil Armstrong and Michael Collins, who was the third member of the Apollo 11 crew?



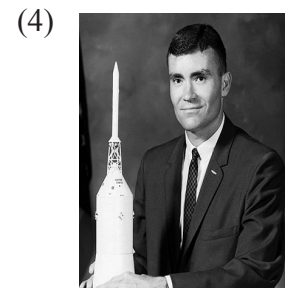
William Anders



James A. Lovell, Jr

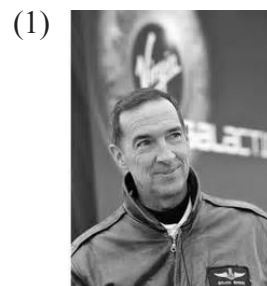


Buzz Aldrin



Fred Haise

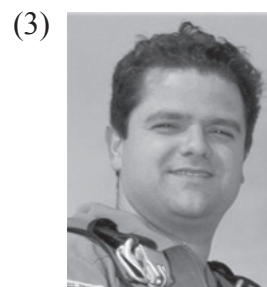
50. Who was the pilot of SpaceShipOne, the spaceplane that completed the first privately funded human spaceflight?



Brian Binnie



Mike Melvill



Peter Siebold



Doug Shane

51. A star of which colour can be said to be the coolest?
- (1) Yellow
  - (2) Blue
  - (3)\*Red
  - (4) Black
52. In order to know the time, the astronauts orbiting in an earth satellite should use:
- (1)\*a watch having mainspring to keep it going
  - (2) a pendulum clock
  - (3) either a pendulum clock or a watch
  - (4) an alarm clock
53. Black hole is:
- (1) A dark hollow cavity
  - (2)\*A massive collapsing star
  - (3) The other side on the moon
  - (4) The other side of sun
54. The solitary moon of Pluto is named after the boatman of Greek mythology who ferries the dead across the River Styx. Its name is
- (1) Erebus
  - (2)\*Charon
  - (3) Nox
  - (4) Persephone
55. Which civilization developed and implemented the first solar calendar?
- (1) Babylonian
  - (2) Greek
  - (3)\*Egyptian
  - (4) Aztec
56. What is the hottest region of the sun?
- (1) The core
  - (2) The photosphere
  - (3) The chromosphere
  - (4)\*The corona
57. In which spectral region is it possible for astronomers to observe through clouds?
- (1) Visual
  - (2)\*Radio
  - (3) Ultraviolet
  - (4) X-ray
58. The Magellanic Clouds are
- (1)\*irregular galaxies
  - (2) spiral galaxies
  - (3) elliptical galaxies
  - (4) large clouds of gas and dust
59. Which one of the following moon features is named Copernicus?
- (1) Sea
  - (2)\*Crater
  - (3) Mountain range
  - (4) Rill
60. Hercules is a constellation which is commonly viewed in the summer in North America. In which of the seasons is the constellation "Pegasus" normally viewed?
- (1)\*Autumn
  - (2) Summer
  - (3) Spring
  - (4) Winter
- \* denotes answer.



**END OF THE EXAM**