

PHYSICS

Q1) A sheet of paper is placed on a table and a jug full of water is kept on it while pulling the paper suddenly, it is observed that the water does not spill out of jug. It is due to the inertia of the

- a) Paper sheet
- b) Jug and water in it
- c) Hard
- d) Table

Q2) "Every action has equal and opposite reaction" was discovered by

- a) Pascal
- b) Newton
- c) Edison
- d) Copernicus

Q3) If a car travels a distance of 100 Km & it takes 25 minutes to reach its destination, the speed of the car is

- a) 4Km/hr
- b) 4mt/min
- c) 400mt/min
- d) None of these

Q4) Name of the scientist who gave the relation between mechanical energy and heat energy

- a) Darwine
- b) James watt
- c) James precot joule
- d) Sir Isac Newton

Q5) A 1500 w electric geyser used everyday for 2 hrs. Calculate the energy consumed?

- a) 90Kwh
- b) 30Kwh
- c) 750Kwh

d) None of these

Q6) As per the law of conservation of energy during a process or transformation of energy, the energy is

- a) Always lost
- b) Always gained
- c) Neither gained nor lost
- d) Only gets converted for heat to mechanical energy

Q7) An engine supplies 196 joules of energy. If the energy is supplied to a weight of 500gms. How high it can be lifted?

- a) 38.2
- b) 39.2
- c) 40.2
- d) 42

Q8) Which of the following force is responsible for taking a gas ballon upwards?

- a) Gravitational force
- b) Muscular force
- c) Bouyant force
- d) Magnetic force

Q9) When white light is passed through a prism , it is observed that violet light bends more than the red light . This is because

- a) Velocity of red light in glass is less than that of violet light
- b) Refractive Index of glass is more for violet light
- c) Wave length of violet light is less than that of red light
- d) It is the properties of these colours

Q10) Pascal's law hold good for

- a) Gases only
- b) Liquid & fluid
- c) Solids only
- d) For all

Q11) The Instrument for measuring electric current is known as

- a) Ammeter
- b) Voltmeter
- c) Galvanometer
- d) Chronometer

Q12) Find at what temperature, the velocity of sound in air is 1.5 times the velocity at 70°C

- a) 357°C
- b) 387°C
- c) 350°C
- d) 290°C

Q13) If m_1 and m_2 be the masses of two bodies , d be the distance between them, the force of attraction (F) as per the universal law of gravitation is

- a) $F = m_1m_2/d^2$
- b) $F = G m_1m_2/d^2$
- c) $F = G m_1m_2/d$
- d) $F = G m_1^2 m_2^2 /d^2$

Q14) The acceleration due to gravity is zero at

- a) Poles
- b) Equator
- c) Center of earth
- d) None of these

Q15) The energy of an electron in n the orbit of a hydrogen atom is given by

- a) $E_n = -13.6 /n^2 \text{ ev.}$
- b) $E_n = -13.6 /n^3 \text{ ev.}$
- c) $E_n = 13.6/n^2 \text{ ev.}$
- d) $E_n = 13.6 /n^3 \text{ ev.}$

Q16) The size of an atom is nearly

- a) 10^{-5}m
- b) 10^{-8}m

- c) 10^{-15} m
- d) 10^{-10} m

Q17) The force of repulsion between two parallel wires is 'f' when each one of them carries a certain current 'I'. If the current in each is doubled, the force between them would be

- a) 2f
- b) 3f
- c) 4f
- d) f/4

q18) A fuse wires has eventually

- a) high resistance & high melting point
- b) Low resistance & high melting point
- c) Low resistance & low melting point
- d) None of these

Q19) The emf of 3 identical cells connected in series is 6 V. The emf of each is

- a) 6V
- b) 2V
- c) 3V
- d) None of these

Q20) One weber/m² is equal to

- a) 10^{-3} gram
- b) 10^{-4} gram
- c) 10^4 gram
- d) None of these

Q21) A person using convex lens must be suffering from

- a) Myopia
- b) Astigmatism
- c) Hypermyopia
- d) None of these

Q22) If there is no atmosphere, then the duration of daylight on earth will

- a) Increase
- b) Decrease
- c) Remain same
- d) None of these

Q23) The critical angle of liquid is 30° . Its refractive index will be

- a) 4
- b) 2
- c) 3
- d) 0.5

Q24) A hydrometer measures

- a) The constant of Hygroscopic substance
- b) Relative density of solids
- c) Relative density of liquids
- d) Amount of water vapour in air

Q25) Doping is a process of

- a) Purifying the semiconductor
- b) Making the material crystalline
- c) Adding controlled impurities into the material
- d) Making the material an insulator

Q26) The value of plank's constant

- a) Depends upon frequency
- b) Is always same
- c) Depends upon energy
- d) Depends on wavelength

Q27) Which of the given samples of equal volumes of Hydrogen & Oxygen at NTP has a large number of molecules

- a) Hydrogen
- b) Oxygen
- c) Both have the same number of molecules
- d) None of these

Q28) A sample of the gas is at 0° . What is the requirement of temperature for increment to double the r.m.s. speed of molecules?

- a) 273°
- b) 1000°
- c) -273°
- d) 1092°

Q29) Equal volume of all gases, measured under the same condition of pressure and temperature contain the same number of molecules. This is known as

- a) Boyle's law
- b) Charle's law
- c) Avogadro law
- d) Ottovan law

Q30) The net charge flowing through a cross section of a conductor in unit time is known as

- a) Ampere
- b) Volt
- c) Resistance
- d) Electric potential

DEMOCRATIC POLITICS

1. Which of the following does not lead to the spread of democracy?
 - a) Struggle by the people
 - b) Invasion of foreign countries
 - c) End of colonialism
 - d) People's desire for freedom.
2. Who had described the US war on Iraq in early 21st century illegal?
 - a) Kofi Annan
 - b) Lech Walesa
 - c) Tony Blair
 - d) Pervez Musharraf
3. Which one of the following countries introduced universal adult franchise first in the world?
 - a) Russia
 - b) Germany
 - c) New Zealand
 - d) Netherland
4. Who has been given veto power in the United Nation ?
 - a) All the members of Security Council
 - b) Only the Permanent members of Security Council.
 - c) All the members of United Nation
 - d) Both Permanent as well as Non Permanent members.
5. The sudden overthrow of a government especially by military is called
 - a) revolution
 - b) coup
 - c) rigging
 - d) None of these
6. A direct vote of people to accept or reject a proposal is called
 - a) Election
 - b) Survey
 - c) Referendum
 - d) All of these
7. One who does not believe in the existence of God is called
 - a) Atheist
 - b) Monetheist
 - c) Secularist
 - d) All of these

8. One of the following does not match :

- a) Allende : Poland
- b) Bachelet : Chile
- c) Nkrumah : Ghana
- d) Suu Kyi : Myanmar

9. The Solidarity movement leader , in Poland was:

- a) Michelle Bachelet
- b) Lech Walesa
- c) Augusto Pinochet
- d) Salvador Allende

10. The following freedom is taken away once democracy is overthrown

- a) freedom of life
- b) freedom of trade
- c) freedom of religion
- d) freedom of choosing their rulers.

11. This writ is issued to persons, office or court to enforce duties :

- a) Habeas Corpus
- b) Mandamus
- c) Certiorari
- d) Prohibition

12. Writs are issued by courts under which Fundamental Right

- a) Right to Equality
- b) Right to Freedom
- c) Right to constitutional Remedies
- d) Right against Exploitation

13. We have borrowed the principle of Directive Principle from

- a) USA
- b) Sweden
- c) Ireland
- d) England

14. This Fundamental Right is the "Heart and Soul" of the Indian Constitution.

- a) Right to Equality
- b) Right to Freedom
- c) Right to constitutional Remedies
- d) Right against Exploitation

15. If the Emergency is imposed suddenly, the proposal for the same has to be passed within

- a) 15 days
- b) a month
- c) 3 months
- d) 6 months.

16.If the Emergency is imposed suddenly Schedule, the proposal for the same has to be passed by

- a) a simple majority
- b) an absolute majority
- c) two – third majority
- d) any of these.

17.Anti Defection Act has been mentioned in which Schedule of the Indian Constitution

- a) 1st Schedule
- b) 8th Schedule
- c) 10th Schedule
- d) 12th Schedule

18.The Committee that suggested the formation of a three – tier structure of Panchayati Raj:

- a) Mukherjee Committee
- b) Mudaliar Commission
- c) Balwant Rai Mehta Committee
- d) None of these

19.The writ through which the Higher courts take over case from lower courts:

- a) Certiorari
- b) Quo Warranto
- c) Prohibition
- d) Mandamus.

20.Political Executive represents

- a) All Ministers belonging to majority party
- b) All elected members
- c) Only cabinet ministers
- d) Only Prime Minister

21.Right to Life has been guaranteed under which article

- a) Article 20
- b) Article 21
- c) Article 21A
- d) Article 22

22.How much more an Indian woman , on an average works than a man everyday :

- a) one hour more
- b) two hours more
- c) three hours more
- d) one hour less

23. One of the following three features were committed by the leaders of the Congress Party in 1928 and in 1931 to keep as basic principles in the independent Constitution of India after India wins freedom

- A) a socialist – secular system
- b) universal adult franchise
- c) freedom and equality
- d) protection of the rights of minorities

Select the correct code

- 1) a, b and c
- 2) a, b and d
- 3) a, c and d
- 4) b, c and d

24. Apartheid is a system of

- a) economic depression
- b) political discrimination
- c) racial discrimination
- d) religious discrimination

25. After reading the Preamble of the Constitution of India, USA and South Africa, you will find the following values

Common in all the three Constitutions :

- a) of equality and liberty
- b) of equality and justice
- c) of justice and liberty
- d) of liberty and fraternity

26. The Nayay Yudh campaign was launched by one who became a deputy prime minister of India as well

- a) Vallabhbhai Patel
- b) Morarji Desai
- c) Jagjiwan Ram
- d) Devilal

27. In the elections, the voters make many choices. The following is not the choice which they make :

- a) They choose who will be their PM.
- b) They choose who will make laws for them.
- c) They choose who will form government for them.
- d) They choose whose policies will be implemented in the country.

28. Who among the following is a part of the political executive ?

GEOGRAPHY

1. Match list – I with List -II correctly and choose code from the following:

List – I

- (A) Kaveri
- (B) Godavari
- (C) Tapi
- (D) Krishna

List - II

- (i) Nasik
- (ii) Betul
- (iii) Brahmagiri
- (iv) Mahabaleshwar

Code:

- | | A | B | C | D |
|-----|-----|-----|-----|----|
| (1) | I | ii | iii | iv |
| (2) | iii | I | ii | iv |
| (3) | ii | iii | I | iv |
| (4) | iv | iii | ii | i |

2. Which island was known as Amindive whose name changed in 1973?

- (1) Lakshadweep (2) Maldives (3) New Moore Island (4) Car- Nicobar

3. Rubber is related to which type of vegetation?

- (1) Tundra (2) Tropical rain forest (3) Mountain forest (4) Tropical deciduous forest

4. Which of the following soil covers the largest area?

- (1) Alluvial soil (2) Black cotton soil (3) Laterite soil
(4) Red soil

5. Out of the following, at which place the sun rises first?

- (1) Bengaluru (2) Bhopal (3) Hyderabad (4) Mumbai

6. Stalagmite and Stalactite cave are located in

- (1) Mawsynram (2) Cherrapunji (3) Shimla (4) Jammu & Kashmir

7. Koderma mines located in Jharkhand is rich in which minerals?

- (1) Bauxite (2) Mica (3) Iron ore (4) Copper

8. What is the longitudinal extent of India?

(1) 60° 10' East to 96° 27' East

(2) 67° 05' East to 96° 22' East

(3) 69° 05' East to 98° 22' East

(4) 68° 07' East to 97° 25' East

9. Which state has the highest sugarcane production?

(1) Bihar

(2) Haryana

(3) Maharashtra

(4)

Uttar Pradesh

10. Which of the following mountains make the water divide between Bay of Bengal and Arabian sea drainage?

(1) Amarkantak

(2) Nilgiri

(3) Rajmahal

(4) Satpura

11. India's longest boundary is with

(1) Bangladesh

(2) Nepal

(3) Pakistan

(4) China

12. Which of the following is the youngest structure in India?

(1) Great Himalaya

(2) Middle Himalayas

(3) Shiwalik

(4)

Peninsular India

13. Where is National Geothermal Research Institute situated?

(1) Mumbai

(2) Delhi

(3) Hyderabad

(4)

Ahmedabad

14. In which of the following state Black and Regur soil is not found?

(1) Gujarat

(2) Punjab

(3) Madhya Pradesh

(4) Maharashtra

15. In which type forest mangrove trees are found?

(1) Tropical rainforest

(2) Temperate forest

(3) Tidal forest

(4)

Thorny forest

16. Tropic of Cancer passes through how many states of India?

(1) five

(2) Six

(3) Seven

(4) Eight

17. Which state has the lowest population density according to 2011 census?

(1) Himachal Pradesh

(2) Arunachal Pradesh

(3) Assam

(4) Manipur

18. The highest peak in the Eastern Ghats is

(1) Anaimudi

(2) Mt. Gurushikar

(3) Astamba Dhongar

(4) Amakonda

19. Circar Coast is

(1) Northern part of west coastal plain (2) Southern part of east coastal plain

(3) Northern part of east coastal plain (4) Southern part of west coastal plain

20. Column – I is the list of states and Column – II is the names of rainfall during April and May. Match them.

Column – I

Column – II

(A) Kerala

(i) Andhis

(B) Karnataka

(ii) Kalbaisakhi

(C) Uttar Pradesh

(iii) Coffee blossoms

(D) West Bengal

(iv) Mango showers

(1) A → (iii), B → (iv), C → (ii), D → (i)

(2) A → (i), B → (ii), C → (iii), D → (iv)

(3) A → (iv), B → (iii), C → (i), D → (ii)

(4) A → (ii), B → (i), C → (iv), D → (iii)

21. Which of the following minerals is contained in Monazite sands?

(1) Coal

(2) Petroleum

(3) Thorium (4) Uranium

22. Which one of the following river is tributary of the Ganga?

(1) Betwa

(2) Ken

(3) Chambal (4) Son

23. Which one of the following is the deepest port in India?

(1) Kandla

(2) Kolkata

(3) Mumbai (4) Vishakhapatnam

24. Which one of the following is the longest river of the peninsular India?

(1) Godavari

(2) Mahanadi

(3) Krishna (4) Narmada

25. Which one of the following is a non-metallic mineral?

(1) copper

(2) lead

(3) Tin

(4) limestone

ECONOMICS

1. Who is the person who put together land, labour, capital?

- a) Moneylender
- b) Entrepreneur
- c) Zamindar
- d) Manager

2. Consumption of chemical fertilisers is highest in which state of India?

- a) Punjab
- b) Haryana
- c) Rajasthan
- d) Himachal Pradesh

3. self-consumption is

- a) Non-productive activity
- b) Non-market activity
- c) non-economic activity
- d) None of these

4. The concept of white revolution is associate with

- a) Food crops
- b) milk
- c) cotton
- d) pesticides

5. People as a resource refers to their

- a) Educational skill
- b) productive skill
- c) health status
- d) none of these

6. PHC stands for

- a) Public health club
- b) Private Health club
- c) Primary Health centre
- d) public health centre

7. Which organisation carries out survey for determining the poverty line?

- a) NSSO
- b) CSO
- c) Planning commission
- d) PHC

8. Which state has focused more on human resource development?

- a) Tamil Nadu
- b) Punjab
- c) Maharashtra
- d) Kerala

9. What is the main cause of poverty in India ?

- a) High income inequality
- b) Less job opportunities
- c) high growth in population
- d) All of these

10. In rural areas, which of the following are not poor?

- a) landless agricultural workers
- b) Backward classes
- c) Rural artisans
- d) Medium farmers

11. Which scheme was started in 1993 to create self-employment opportunities for educated unemployed in rural areas

- a) PMRY
- b) NREGA
- c) REGP
- d) SGSY

12. MSP refers to

- a) Minimum Support Price
- b) Maximum Support Price
- c) Marginal support price
- d) None of these

13. Public Distribution System is associated with:

- a) Fair price shop
- b) Cooperative stores
- c) Super bazaar
- d) self-help group

14. Annapurna Scheme meets the food requirements of:

- a) Indigent Senior Citizens
- b) Children
- c) Pregnant ladies
- d) young persons

15. Antodaya cards are related to:

- a) All poor
- b) poorest of the poor
- c) persons above poverty line
- d) None of these

16. Things like equal treatment , freedom, security and respect of others are:

- a) Material things
- b) Non-material things
- c) Income
- d) growth

17. Literacy measures the proportion of literate population in the ----- age group.

- a) 5 and above
- b) 6 and above
- c) 7 and above
- d) 8 and above

18. Economic growth plus change means:

- a) Economic Development
- b) National income
- c) Sustainable Development
- d) None of these

19. Under the National Rural Employment Guarantee Act 2005, Work has been guaranteed for ---- days

- a) 100
- b) 200
- c) 300
- d) 150

20. Biscuits for the consumer in the market is a-----

- a) Final good
- b) Intermediate good
- c) Good
- d) services

21. The share of tertiary sector to the GDP has increased but the contribution of which sector to employment is highest at present?

- a) primary
- b) secondary
- c) tertiary
- d) public

22. Double coincidence of wants is a feature of-----

- a) Money
- b) barter system
- c) market
- d) Economy

23. Banks and cooperatives sector are included in which sector loan?

- a) Formal Sector
- b) Informal sector
- c) Credit sector
- d) RBI

24. Deposits in bank accounts withdrawn on demand are called:

- a) Fixed deposits
- b) recurring deposits
- c) Demand deposits
- d) None of these

25. Where do MNCs choose to set up production?

- a) Cheap goods
- b) Cheap labour
- c) Economic Stability
- d) Developed country

26. Globalisation is the process of rapid ----- between countries.

- a) Integration
- b) Interlocation
- c) Interrelated
- d) Connection

27. SEZs stands for:

- a) Special Environment Zone
- b) Social Economic Zone
- c) Special Economic Zone
- d) Social Environment Zone

28. In 1985 the United Nations adopted the UN guidelines for-----

- a) Consumer Protection
- b) Consumer Awareness
- c) Consumer movement
- d) Consumer explosion

29. Right to Information Act came into existence in -----

- a) 2004
- b) 2005
- c) 2006
- d) 2007

30. Consumer movements in India are:

- a) Financed by the state
- b) Voluntary organisations
- c) backed by political parties
- d) Ineffective and useless

BIOLOGY

Q1: In plants which of the following have the capability of cell division?

- (a) Parenchyma
- (b) Scelerenchyma
- (c) Xylem
- (d) Apical Meristem

Q2: The growth in plants is

- (a) limited to certain regions
- (b) uniform in all parts
- (c) limited to top region
- (d) limited to roots only.

Q3: Intercalary meristems are found

- (a) at internodes and base of leaves
- (b) at growing tips of roots
- (c) beneath the bark
- (d) at the tips of stem

Q4: Which animal tissue are usually separated from the underlying tissue by an extracellular fibrous basement membrane?

- (a) Muscular tissues
- (b) Connective tissues
- (c) Epithelial tissues
- (d) Nervous tissues

Q5: Which of the following can be made into crystal?

- (a) A bacterium
- (b) An Amoeba
- (c) A virus
- (d) A sperm

Q6: Who used the word 'protoplasm first time for living cells?

- (a) Robert Hooke
- (b) Leeuwenhoek
- (c) Purkinje
- (d) Robert Brown

Q7: Chromosomes are made up of nucleic acid and _____

- (a) Phosphorus
- (b) Protein
- (c) Sugar
- (d) Calcium

Q8: Plastids which are responsible for giving colors to fruits and flowers are

- (a) chloroplasts
- (b) leucoplasts
- (c) protoplasts
- (d) chromoplasts

Q9: Which of the following organelle is present onion cells but not in human cheek cells?

- (a) cell wall
- (b) cytoplasm
- (c) nucleus
- (d) plasma membrane

Q10: Which of the following is a viral infection?

- (a) Diphtheria
- (b) Influenza
- (c) Cholera
- (d) Typhoid

Q11: HIV virus when active in body mainly attacks on

- (a) lungs
- (b) liver
- (c) immunity
- (d) nerves

Q12: Vaccination helps in controlling diseases because

- (a) it develops resistance against the pathogen attack
- (b) it kills the pathogens causing disease
- (c) it blocks the food supplied to pathogens
- (d) it does not allow pathogens to multiply in hosts

Q13: ORS is given in

- (a) diarrhea
- (b) measles
- (c) typhoid
- (d) tetanus

Q14: Corbett National Park is famous for?

- (a) Neel Gai
- (b) Snakes
- (c) Rhinoceros
- (d) Tigers

Q15: Which of the following is a nonrenewable energy source?

- (a) Natural gas
- (b) Solar energy
- (c) Wind energy
- (d) Tidal energy

Q16. Glycolysis for the formation of pyruvates takes place in :

- a) Cytoplasm
- b) Mitochondria
- c) Chloroplast

d) Nucleus

Q17. Spinal cord originates from:

- a) Cerebrum
- b) Medulla
- c) Pons
- d) Cerebellum

Q18. Posture and balance of body is controlled by:

- a) Cerebellum
- b) Medulla
- c) Pons
- d) Cerebrum

Q19. In rhizopus , tubular thread like structures bearing sporangia at their tips are called:

- a) Filaments
- b) Hyphae
- c) Rhizoids
- d) Roots

Q20. Which of the following is not a sexually transmitted diseases:

- a) Syphilis
- b) Hepatitis
- c) HIV-AIDS
- d) Gonorrhoea

Q21. Which of the following gland is unpaired?

- a) Adrenal
- b) Testis
- c) Pituitary
- d) Ovary

Q22. Which of the following is not an involuntary action?

- a) Vomiting
- b) Heart beat
- c) Salivation
- d) Chewing

Q23. The ability of the cell to divide into several cells during reproduction in plasmodium is called:

- a) Budding
- b) Reduction division
- c) Binary fission
- d) Multiple fission

Q24. The theory for evolution of species by natural selection was given by:

- a) Mendel
- b) Darwin
- c) Morgan
- d) Lamarck

Q25. The number of pairs of sex chromosomes in the zygote of human is:

- a) One
- b) Two
- c) Three
- d) Four

Q26. The flow of energy in the ecosystem is:

- a) Unidirectional
- b) Bidirectional
- c) Multidirectional
- d) No specific direction

Q27. Accumulation of non-biodegradable pesticides in the food chain in increasing amount at each higher trophic level is known as:

- a) Eutrophication
- b) Pollution
- c) Biomagnifications

d) Accumulation

Q28. Arabari forest of Bengal is dominated by:

- a) Teak
- b) Sal
- c) Bamboo
- d) Mangrove

Q29. Khadins , bundhis, ahars are example of:

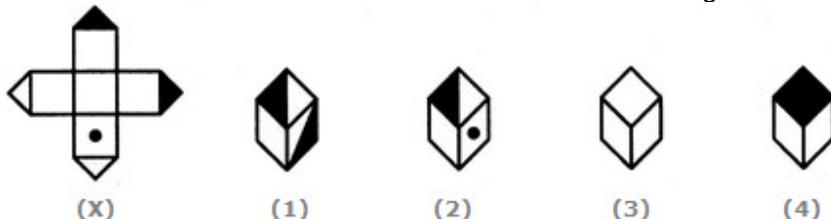
- a) Grain storage
- b) Wood storage
- c) Soil conservation
- d) Water conservation

Q30. During inspiration the diaphragm is:

- a) Flattened
- b) Arched
- c) No change
- d) Moved upward

REASONING QUESTIONS

1. Choose the box that is similar to the box formed from the given sheet of paper (X).



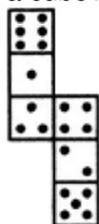
- A. 1 and 2 only
- B. 2 and 4 only
- C. 2 and 3 only
- D. 1 and 4 only

2. Choose the box that is similar to the box formed from the given sheet of paper (X).



- A. 1 and 4 only
- B. 3 and 4 only
- C. 1 and 2 only
- D. 2 and 3 only

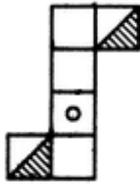
3. How many dots lie opposite to the face having three dots, when the given figure is folded to form a cube?



- A. 2
- B. 4
- C. 5
- D. 6

Choose the box that is similar to the box formed from the given sheet of paper (X).

4.



(X)



(1)



(2)



(3)



(4)

A. 1 and 3 only

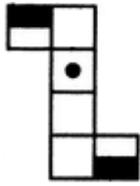
B. 1 and 4 only

C. 2 and 4 only

D. 3 and 4 only

Choose the box that is similar to the box formed from the given sheet of paper (X).

5.



(X)



(1)



(2)



(3)



(4)

A. 1 and 2 only

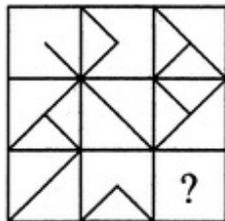
B. 2 and 3 only

C. 2 and 4 only

D. 1, 2, 3 and 4

Select a suitable figure from the four alternatives that would complete the figure matrix.

6.



(1) (2) (3) (4)

A. 1

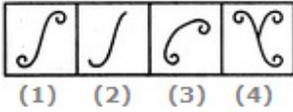
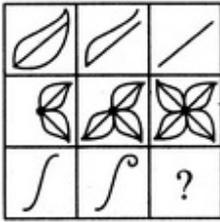
B. 2

C. 3

D. 4

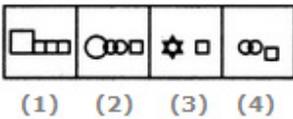
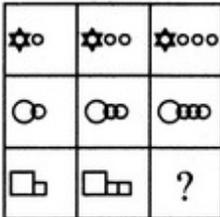
Select a suitable figure from the four alternatives that would complete the figure matrix.

7.



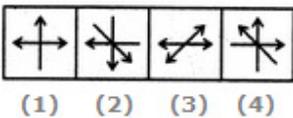
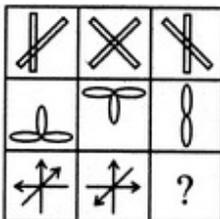
- A. 1
- B. 2
- C. 3
- D. 4

8. Select a suitable figure from the four alternatives that would complete the figure matrix.



- A. 1
- B. 2
- C. 3
- D. 4

9. Select a suitable figure from the four alternatives that would complete the figure matrix.



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

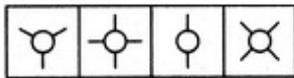
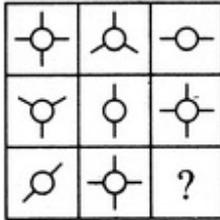
A. 1

B. 2

C. 3

D. 4

10. Select a suitable figure from the four alternatives that would complete the figure matrix.



(1) (2) (3) (4)

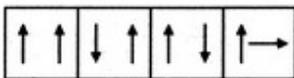
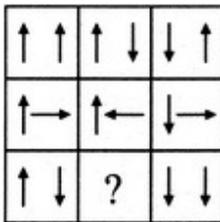
A. 1

B. 2

C. 3

D. 4

11. Select a suitable figure from the four alternatives that would complete the figure matrix.



(1) (2) (3) (4)

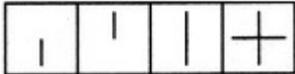
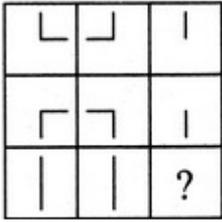
A. 1

B. 2

C. 3

D. 4

12. Select a suitable figure from the four alternatives that would complete the figure matrix.



(1) (2) (3) (4)

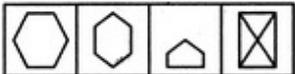
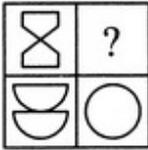
A. 1

B. 2

C. 3

D. 4

13. Select a suitable figure from the four alternatives that would complete the figure matrix.



(1) (2) (3) (4)

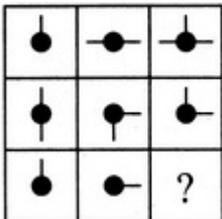
A. 1

B. 2

C. 3

D. 4

14. Select a suitable figure from the four alternatives that would complete the figure matrix.



(1) (2) (3) (4)

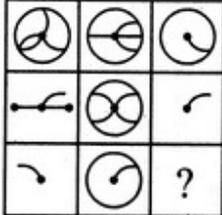
A. 1

B. 2

C. 3

D. 4

15. Select a suitable figure from the four alternatives that would complete the figure matrix.



(1) (2) (3) (4)

A. 1

B. 2

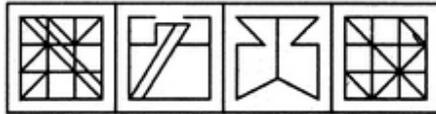
C. 3

D. 4

16. Find out the alternative figure which contains figure (X) as its part.



(X)



(1)

(2)

(3)

(4)

A. 1

B. 2

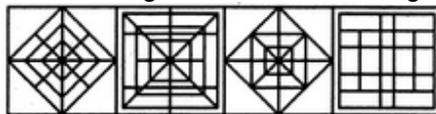
C. 3

D. 4

17. Find out the alternative figure which contains figure (X) as its part.



(X)



(1)

(2)

(3)

(4)

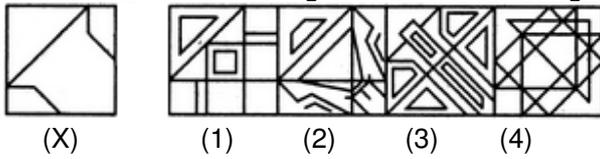
A. 1

B. 2

C. 3

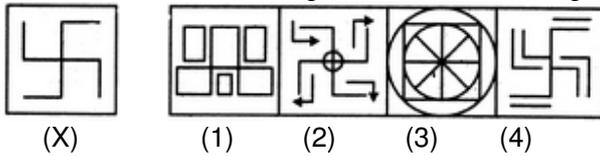
D. 4

18. Find out the alternative figure which contains figure (X) as its part.



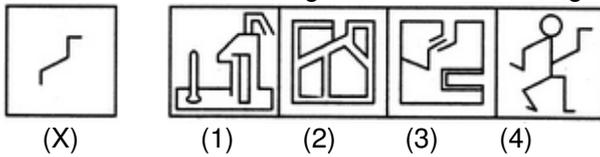
- A.** 1
- B.** 2
- C.** 3
- D.** 4

19. Find out the alternative figure which contains figure (X) as its part.



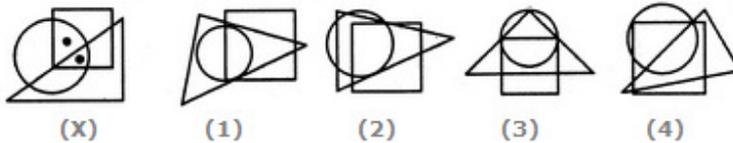
- A.** 1
- B.** 2
- C.** 3
- D.** 4

20. Find out the alternative figure which contains figure (X) as its part.



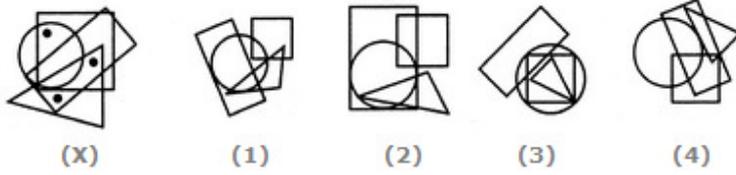
- A.** 1
- B.** 2
- C.** 3
- D.** 4

21. Select the figure which satisfies the same conditions of placement of the dots as in Figure-X.



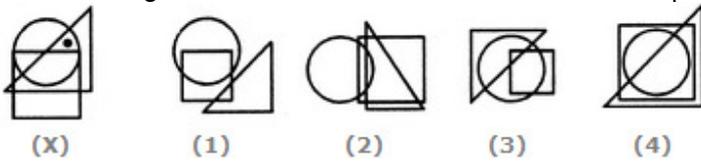
- A.** 1
- B.** 2
- C.** 3
- D.** 4

22. Select the figure which satisfies the same conditions of placement of the dots as in Figure-X.



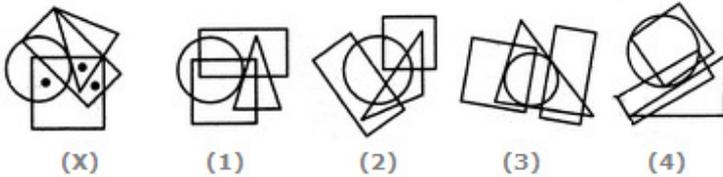
- A.** 1
- B.** 2
- C.** 3
- D.** 4

23. Select the figure which satisfies the same conditions of placement of the dots as in Figure-X.



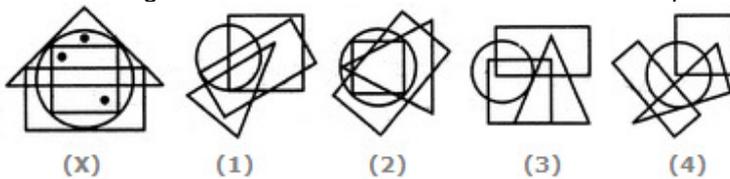
- A.** 1
- B.** 2
- C.** 3
- D.** 4

24. Select the figure which satisfies the same conditions of placement of the dots as in Figure-X.



- A.** 1
- B.** 2
- C.** 3
- D.** 4

25. Select the figure which satisfies the same conditions of placement of the dots as in Figure-X.



- A.** 1
- B.** 2

C. 3

D. 4

26. Pointing to a photograph of a boy Suresh said, "He is the son of the only son of my mother." How is Suresh related to that boy?

A. Brother

B. Uncle

C. Cousin

D. Father

27. If $A + B$ means A is the mother of B; $A - B$ means A is the brother B; $A \% B$ means A is the father of B and $A \times B$ means A is the sister of B, which of the following shows that P is the maternal uncle of Q?

A. $Q - N + M \times P$

B. $P + S \times N - Q$

C. $P - M + N \times Q$

D. $Q - S \% P$

28. If A is the brother of B; B is the sister of C; and C is the father of D, how D is related to A?

A. Brother

B. Sister

C. Nephew

D. Cannot be determined

29. If $A + B$ means A is the brother of B; $A - B$ means A is the sister of B and $A \times B$ means A is the father of B. Which of the following means that C is the son of M?

A. $M - N \times C + F$

B. $F - C + N \times M$

C. $N + M - F \times C$

D. $M \times N - C + F$

30. Introducing a boy, a girl said, "He is the son of the daughter of the father of my uncle." How is the boy related to the girl?

A. Brother

B. Nephew

C. Uncle

D. Son-in-law

MATHEMATICS

1. In finding the HCF of the two numbers, the last divisor is 19 and the quotients are 3,5, and 2. Find the greatest of the two numbers.
(a) 361 (b) 627 (c) 665 (d) 893
2. Which of the following cannot be the ratio of HCF to LCM of two positive integers P and Q ?
(a) 1 : 21 (b) 4 : 96 (c) 1 : 77 (d) 2 : 5
3. If you divide my car number by 2,3,4,7 and 8 each time, the remainder is 1. But if you divide it by 11, the remainder is 7. The lowest car number is
(a) 505 (b) 169 (c) 194 (d) 337
4. If $(x + a)(x + b)(x + c) = x^3 - 6x^2 + 11x - 6$, then the value of $a^2 + b^2 + c^2$ is
(a) 12 (b) 14 (c) 19 (d) 13
5. If α and β are the roots of $x^2 + px + q = 0$, then $\left(\frac{\alpha}{\beta} + \frac{\beta}{\alpha}\right)$ is equal to
(a) $\frac{p^2-2q}{q}$ (b) $\frac{p^2+2q}{q}$ (c) $\frac{p^2-2q}{p}$ (d) $\frac{p^2+2q}{p}$
6. If $\sqrt{a} + \sqrt{b} + \sqrt{c} = 0$ then the value of $(a - b + c)^2$ is
(a) $2ab$ (b) $2bc$ (c) $4ab$ (d) $4ac$
7. How many integers p are there to satisfy $4x^2 + 2px + (p + 5) > 0$?
(a) 2 (b) 6 (c) 9 (d) none of these
8. What must be added to $a^4 + 2a^3 - 2a^2 + a - 1$ so that the result is exactly divisible by $a^2 + 2a - 3$?
(a) $a + 1$ (b) $a - 1$ (c) $a - 2$ (d) $a + 2$
9. Find the zeroes of the polynomial $n^3 - 13n^2 + 39n - 28$, if the zeroes are in A.P.
(a) 2,4,6 (b) 1,3,6 (c) 1,4,7 (d) none of these
10. If t_n be the n th term of an A.P. and $t_8 = 12$, then for which value of common difference, $t_2 t_8 t_{14}$ would be greatest ?
(a) 2 (b) 4 (c) 6 (d) none of these
11. Three numbers are in A.P. whose sum is 15 and their product is 80, then the greatest number among them is
(a) 5 (b) 8 (c) 10 (d) 15
12. The equation of the line passing through (1,2) and (-2,2) is

- (a) $y = x + 1$ (b) $y = -x$ (c) $y = 2$ (d) none of these
13. The slope of a vertical line is
 (a) 0 (b) 1 (c) -1 (d) undefined
14. The equation of the line with slope 0 and passing through the point (4,6) is
 (a) $x = 4$ (b) $x = -4$ (c) $y = 6$ (d) $y = -6$
15. Two numbers x & y are chosen at random from the set of numbers 1,2,...,30. Find the probability that $a^2 - b^2$ is divisible by 3.
 (a) $\frac{1}{3}$ (b) $\frac{47}{87}$ (c) $\frac{13}{85}$ (d) $\frac{23}{90}$
16. If someone draws a card at random from a deck and then without replacing the first card, draws a second card. What is the probability that both cards will be kings ?
 (a) $\frac{16}{2704}$ (b) $\frac{4}{52}$ (c) $\frac{1}{221}$ (d) $\frac{3}{51}$
17. A coin is tossed 10 times and 8 times it turned up 'head'. What is the probability of again getting 'head' on the 11th toss ?
 (a) $\frac{8}{10}$ (b) $\frac{8}{11}$ (c) $\frac{1}{11}$ (d) None of these
18. What is the probability that a number chosen at random from 1,2,3,...,100 is divisible at 3 or 5 .
 (a) $\frac{53}{100}$ (b) $\frac{47}{100}$ (c) $\frac{33}{100}$ (d) none of these
19. A man bets on number 16 on a roulette wheel(has numbers from 1 to 36) 14 times and losses each time. On the 15th span he does a quick calculation and finds out 12 had appeared twice in 14 spans and is therefore, unable to decide whether whether to bet on 16 or 12 in the 15th span. Which one will give him the best chance and what are the odds of winning on the bet that he takes ?
 (a) 16, 22:14 (b) 12, 72:1 (c) 12, 7:1 (d) Either, 35:1
20. If $x \sin^3 \theta + y \cos^3 \theta = \sin \theta \cdot \cos \theta$ & $x \sin \theta - y \cos \theta = 0$, then the value of $x^2 + y^2$ is
 (a) 0 (b) 1 (c) 2 (d) 9
21. An aeroplane at an altitude of 200m observes the angle of depression of opposite points on two banks of a river to be 45° & 60° . Find the width of the river.
 (a) 215.4 m (b) 315.4 m (c) 415.4 m (d) 515.4 m
22. A man on the top of a tower on the sea shore, finds that a boat coming towards him takes 10 minutes for the angle of depression to change from 30° to 60° . Find the time taken by the boat to reach the shore from the current position.
 (a) 5 mins (b) 10 mins (c) 8 mins (d) 15 mins
22. Harry and Ron appear in an interview. Probability of Harry's selection is $\frac{1}{5}$ and that of Ron is $\frac{1}{8}$. What is the probability that only one will be selected ?
 (a) $\frac{1}{2}$ (b) $\frac{1}{40}$ (c) $\frac{13}{40}$ (d) $\frac{11}{40}$

23. If $\sin \theta + \sin^2 \theta = 1$, then $\cos^2 \theta + \cos^4 \theta$ is equal to
- (a) 1 (b) 2 (c) $\frac{1}{2}$ (d) 0
24. Find the value k if $2k+7, 6k-2, 8k-4$ are in A.P. Also find the sequence.
- (a) $\frac{1}{2}$ (b) $\frac{3}{2}$ (c) $\frac{5}{2}$ (d) $\frac{7}{2}$
25. Find the greatest four digit number which when divided by 18 & 12 leaves a remainder of 4 in each case
- (a) 9976 (b) 9940 (c) 9904 (d) 9868
