This Question Paper contains 20 printed pages.
(Part - A & Part - B)

Sl.No. 0106491

11 (E)

(MARCH, 2017)

પ્રશ્ન પેપરનો સેટ નંબર જેની સામેનું વર્તુળ OMR શીટમાં ઘટ્ટ કરવાનું રહે છે.
Set No. of Question Paper, circle against which is to be darken in OMR sheet.
01

Part - A : Time : 1Hour / Marks : 50

Part - B : Time : 2 Hours / Marks : 50

(Part - A)

Time : 1 Hour] ***[Maximum Marks : 50***

Instructions :

1) **There are 50 Multiple Choice Questions (M.C.Q.) in Part - A and all questions are compulsory.**
2) **The questions are serially numbered from 1 to 50 and each carries 1 mark.**
3) **Read each question carefully, select proper alternative and answer in the O.M.R. sheet.**
4) **The OMR sheet is given for answering the questions. The answer of each question is represented by (A) O, (B) O, (C) O, (D) O. Darken the circle ● of the correct answer with ball-pen.**
5) **Set No. of Question Paper printed on the upper-most right side of the Question Paper is to be written in the column provided in the OMR sheet.**
6) **Rough work is to be done in the space provided for this purpose in the Test Booklet only.**

1) Microscope is used to observe microscopic objects.

Few microscopes are given below, which one of them is used to see the construction of nano-scale?

(P) Optical Microscope

(Q) Atomic Force Microscope

(R) Scanning Tunneling Microscope

(A) Only P and Q

(B) Only P and R

(C) Only Q and R

(D) All P, Q, R

Rough Work

Rough Work

2) Thermal conductivity of standard SWNT along its length is _____ $\frac{\text{Watt}}{\text{m.K}}$.

(A) 3500

(B) 385

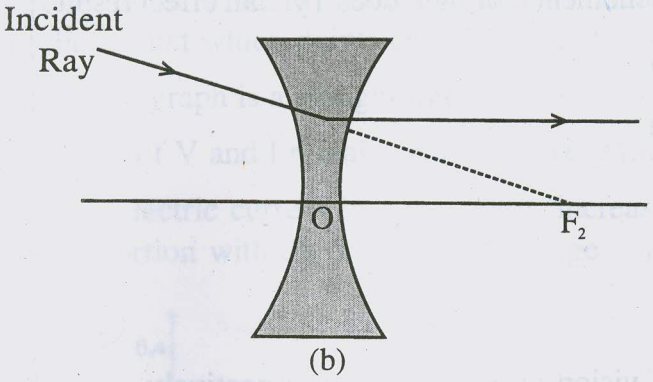
(C) 35000

(D) 35

3) In the following table nature, size and position of images formed by concave mirror are given, which one is wrong?

Option	Position of object	Position of image	Nature of image	Size
A	At infinity	At focus	Real and inverted	Highly diminished
B	Beyond C	Between C and F	Real and inverted	diminished
C	Between C and F	Beyond C	Real and inverted	diminished
D	Between P and F	Behind mirror	Virtual and erect	magnified

4)



(b)

What does above figure indicate?

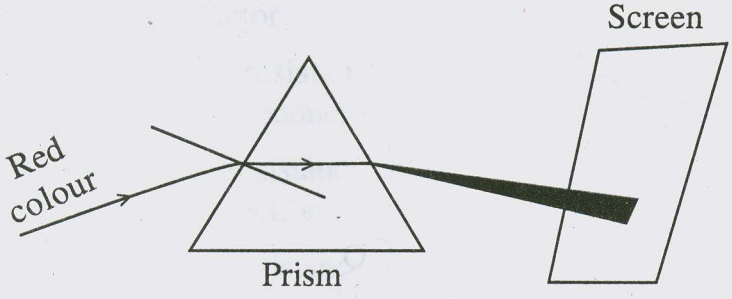
(A) A ray of light parallel to the principal axis after refraction goes way from principal axis by concave lens.

(B) A ray of light passing through focus of concave lens will emerge parallel to principal axis.

(C) A ray of light appear to meet at F_2 will emerge parallel to principal axis after refraction in concave lens.

(D) A ray of light originated from principal axis after reflection will emerge parallel to principal axis in concave lens.

5) Het : In the experiment of prism incident red colour ray instead of white light through prism. Which colour band will you observe on screen?



(A) White colour spectrum

(B) All the colours of rainbow

(C) Maroon and yellow colour spectrum

(D) Red colour spectrum

Rough Work

6) Due to which phenomenon of light does Tyndall effect result?

(A) Reflection

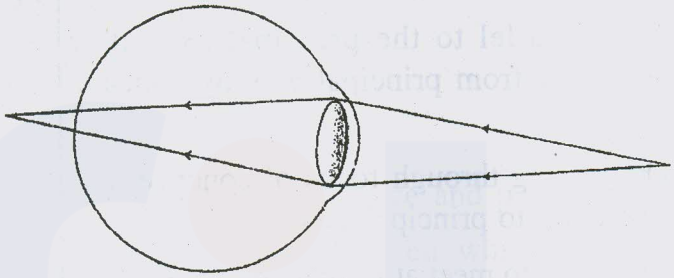
(B) Refraction

(C) Scattering

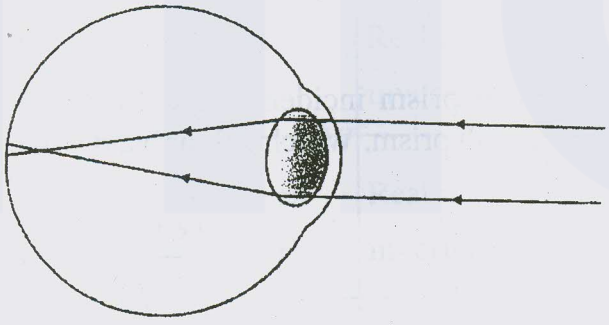
(D) Dispersion

Rough Work

7) Which defect of vision of eye is shown respectively.



P



Q

	P	Q
(A)	P : Presbyopia	Q : Far sightedness
(B)	P : Far sightedness	Q : Near sightedness
(C)	P : Near sightedness	Q : Far sightedness
(D)	P : Presbyopia	Q : Near sightedness

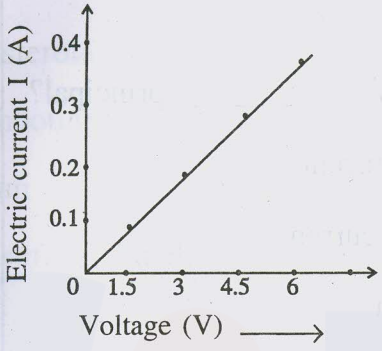
Rough Work

8) From the observation of Ohm's law I → V graph is drawn here. From that which points are concluded?

P : I → V graph is a straight line

Q : Ratio of V and I remains constant every time

R : The electric current in a conductor increases in same proportion with the increase in voltage



(A) Statements P and Q are true

(B) Statements Q and R are true

(C) Statements P and R are true

(D) Statements P, Q and R are all true

9) "The resistance of any conductor is directly proportional to length and inversely proportional to area of cross-section of the substance" from this it is concluded that _____.

P : Value of resistance increases with increase in the length of conductor

Q : Value of resistance decreases with increase in the length of conductor

R : Value of resistance decreases with increase in the area of cross-section

S : Value of resistance decreases with decrease in area of cross-section

(A) Statements Q and R are true

(B) Statements P and S are true

(C) Statements P and R are true

(D) Statements Q and S are true

Rough Work

10) If five equal pieces of 25 Ω are connected in parallel, then their equivalent resistance will be _____.

(A) $\frac{1}{5}$ Ω (B) 1 Ω

(C) 5 Ω (D) 25 Ω

11) Electric Fuse wire is working on _____ principal?

(A) Heating effect of electric current

(B) Chemical effect of electric current

(C) Control of current in circuit

(D) Control of voltage in circuit

12) Which rule is used to know the direction of induced current in a circuit?

(A) Fleming's left hand rule

(B) Fleming's right hand rule

(C) Right hand thumb rule

(D) Galvanometer

13) The magnetic field produced in a straight conducting wire on passing the current through it is _____.

(A) In the direction of current

(B) Circular around the wire

(C) In the direction opposite to the current

(D) In the direction parallel to the wire

Rough Work

14) Who gave the principle of Electro-magnetic induction?

(A) Faraday (B) Oerstead

(C) Ampere (D) Volta

15) Which of the following is not a member of the solar system?

(A) Asteroids

(B) Shooting star

(C) Sun

(D) Artificial Satellite

16) Which satellite is launched by GSLV – Geo Synchronous Satellite Launch vehicle?

(A) EDUSAT (B) IRS – 2

(C) INSAT – 4 A (D) METSAT

17) Match pairs.

Section A		Section B
1) Jupiter	P)	Bluish coloured planet
2) Mars	Q)	The most bright planet
3) Venus	R)	The biggest planet
4) Neptune	S)	Reddish coloured planet

(A) $1 \rightarrow R$, $2 \rightarrow S$, $3 \rightarrow P$, $4 \rightarrow Q$

(B) $1 \rightarrow Q$, $2 \rightarrow P$, $3 \rightarrow R$, $4 \rightarrow S$

(C) $1 \rightarrow R$, $2 \rightarrow S$, $3 \rightarrow Q$, $4 \rightarrow P$

(D) $1 \rightarrow Q$, $2 \rightarrow P$, $3 \rightarrow S$, $4 \rightarrow R$

Rough Work

18) Poles of Mars are covered by _____.

(A) Dry ice (B) Ice

(C) Nitrogen (D) Iron

19) Reaction of acid with base results in formation of salt and water. This reaction is called neutralisation reaction.

During the following reaction decide the pH value and conclusion of the aqueous solution of salts.

	Type of Acid	Type of Base	pH of aqueous solution of salt
1)	Strong acid	Strong base	Neutral
2)	Strong acid	Weak base	Acidic
3)	Weak acid	Strong base	Basic

(P) pH = 7 (Q) pH < 7 (R) pH > 7

(A) $1 \leftrightarrow R$ $2 \leftrightarrow P$ $3 \leftrightarrow Q$

(B) $1 \leftrightarrow Q$ $2 \leftrightarrow P$ $3 \leftrightarrow R$

(C) $1 \leftrightarrow P$ $2 \leftrightarrow R$ $3 \leftrightarrow Q$

(D) $1 \leftrightarrow P$ $2 \leftrightarrow Q$ $3 \leftrightarrow R$

20) Which substance is present in the poison of honey-bee?

(A) Lime

(B) Calcium phosphate

(C) Melittin

(D) Pepsin

21) How many times aqueous solution of pH 2 is more acidic than aqueous solution of pH 4?

(A) Double (B) Sixteen times

(C) Ten times (D) Hundred times

Rough Work

22) How many grams of NaOH should be added in 100 ml to get 2 m NaOH aqueous solution?

(Atomic weight of NaOH is 40 gm/mole)

(A) 40 gm (B) 80 gm

(C) 8 gm (D) 2 gm

23) Which metal is used in thermometer?

(A) Silver (B) Mercury

(C) Sodium (D) Copper

24) Which alloy is used for the soldering of electric wire?

(A) Cu + Zn (B) Al

(C) Pb + Sn (D) Sn + Cu

25) In which of the following, displacement reaction is possible?

(A) Solution of NaCl + Coin of Copper

(B) Solution of $MgCl_2$ + Coin of Aluminium

(C) Solution of $FeSO_4$ + Coin of Silver

(D) Solution of $AgNO_3$ + Coin of Copper

26) In which of the following mineral Copper is not found?

(A) Copper glance (B) Malachite

(C) Cuprite (D) Magnetite

Rough Work

27) During which reaction dihydrogen gas is not produced under normal conditions?

(A) Metal + dilute sulphuric acid

(B) Metal + dilute hydrochloric acid

(C) Metal + dilute nitric acid

(D) Metal + water

28) Which of the following gases is used as preservative in juice of Fruits and Jams?

(A) Ammonia (B) Sulphur dioxide

(C) Dihydrogen (D) Carbon dioxide

29) What is used as a fuel in Jet planes?

(A) Gasolene (B) Diesel oil

(C) Kerosene (D) Liquid Petrol

30) What is called ethanol solution containing 5% water?

(A) Beer (B) Varnish

(C) Rectified spirit (D) Perfumes

31) Which Hydrocarbon is present in the natural gas?

(A) Methane (B) Ethane

(C) Propane (D) Butane

Rough Work

32) Study the following table

	Fraction	Number of Carbon	Temperature range
1)	Gases	C_1 to C_4	298 K
2)	Petrol	C_5 to C_{10}	303 K to 393 K
3)	Naphtha	C_8 to C_{10}	393 K to 453 K
4)	Kerosene	C_{12} to C_{15}	453 K to 533 K
5)	Diesel	C_{15} to C_{18}	533 K to 613 K
6)	Lubricating oil	C_{16} to C_{20}	above 613 K

The table shows the products obtained by fractional distillation of petroleum and temperature range. From this give the right order of the product obtained?

(A) Petrol, Naphtha, Kerosene, Diesel

(B) Diesel, Kerosene, Naphtha, Petrol

(C) Kerosene, Petrol, Diesel, Naphtha

(D) Naphtha, Kerosene, Petrol, Diesel

33) What is the matured form of Coal?

(A) Lignite (B) Bitumin

(C) Anthracite (D) Peat

34) What is the name of compound possesing (–CHO) functional group?

(A) Amide (B) Aldehyde

(C) Ketone (D) Alcohol

Rough Work

35) In which of the following acetic acid is used?

(A) White lead

(B) To remove nail polish

(C) Antiseptic

(D) Antibiotics

36) Which of the following structure is responsible for transportation of water in higher plants ?

(A) Sieve tube

(B) Sieve cell

(C) Vessel

(D) Companion cell

37) In human pancreas secretes pancreatic juice. Match the pairs of enzyme and its function present in it.

	Enzyme	Function
1)	Amylase	a) Digestion of fat
2)	Trypsin	b) Digestion of protein
3)	Lipase	c) Digestion of starch

(A) $1 \leftrightarrow a$ $2 \leftrightarrow b$ $3 \leftrightarrow c$

(B) $1 \leftrightarrow c$ $2 \leftrightarrow b$ $3 \leftrightarrow a$

(C) $1 \leftrightarrow b$ $2 \leftrightarrow c$ $3 \leftrightarrow a$

(D) $1 \leftrightarrow c$ $2 \leftrightarrow a$ $3 \leftrightarrow b$

38) In plants, food and other substances are transported through _____.

(A) Tracheids

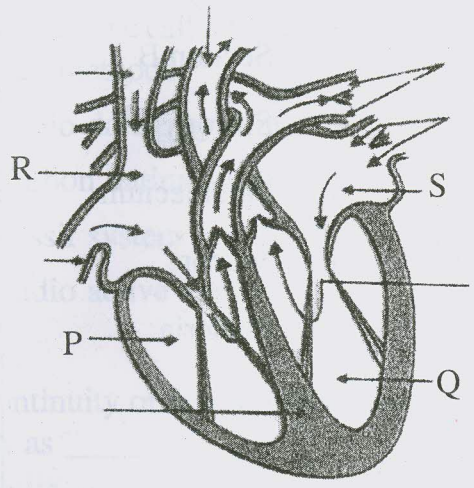
(B) Vessels

(C) Sieve tubes

(D) Companion cell

Rough Work

39)



What are P, Q, R, S in the above figure?

(A) Right atrium, Right ventricle, Left atrium, Left ventricle

(B) Right atrium, Left atrium, Right ventricle, Left ventricle

(C) Right ventricle, Left atrium, Right atrium, Left ventricle,

(D) Right ventricle, Left ventricle, Right atrium, Left atrium

40) In which part of the body blood gets oxygenated?

(A) Heart (B) Lung

(C) Atrium (D) Ventricle

41) Which of the following plant show movement in response of touch?

(A) Bryophyllum (B) Mimosa

(C) Sunflower (D) Periwrinkle

42) Which of the following is not a sex-hormone?

(A) Estrogen (B) Projesteron

(C) Insulin (D) Testosteron

Rough Work

43) Match the pairs of types of asexual reproduction

	Section A		Section B
1)	Fission	i)	Spirogyra
2)	Fragmentation	ii)	Paramecium
3)	Regeneration	iii)	Mucor
4)	Spore-formation	iv)	Planeria

(A) 1 ↔ iii 2 ↔ iv 3 ↔ i 4 ↔ ii

(B) 1 ↔ ii 2 ↔ i 3 ↔ iv 4 ↔ iii

(C) 1 ↔ ii 2 ↔ iii 3 ↔ iv 4 ↔ i

(D) 1 ↔ iv 2 ↔ iii 3 ↔ ii 4 ↔ i

44) What is stage between 40 - 50 years in woman called?

(A) Menstrual cycle

(B) Pregnancy

(C) Menopause

(D) Aborsion

45) For living organism reproduction is essential _____.

(P) For satisfying their energy requirement

(Q) For the survival of their species

(R) Making the things safe against the continuity of life

(S) To keep the organ of animal alive

(A) Statement Q and S are true

(B) Statement P and Q are true

(C) Statement Q and R are true

(D) Statement P and S are true

Rough Work

46) While diging the earth parts of the body of plants and animals are obtained, we call it fossils. Age of this fossil is determined by which method?

(A) Radio dating system

(B) Carbon dating system

(C) Fossil system

(D) Radio active system

47) The continuity of features from one generation to another is known as _____.

(A) Evolution

(B) Mutation

(C) Heredity

(D) Generation

48) Names of endangered plant species are published in :

(A) Green Data Book

(B) Red Data Book

(C) Endangered Species Book

(D) Yellow Data Book

49) Which of the following is not a renewable source of energy?

(A) Wind energy

(B) Water energy

(C) Solar energy

(D) Hydrocarbon fuel

50) Ecosystem is an interacting system made up of :

(A) Organisms and their physical surroundings

(B) Producer and consumers

(C) Producer and their physical surroundings

(D) Consumers and their physical surroundings

11 (E)

(MARCH, 2017)

(Part - B)

Time : 2 Hours] *[Maximum Marks : 50*

Instructions :

1) **Write in a clear hand writing.**
2) **There are four sections in Part - B of the question paper and total 1 to 18 questions are there.**
3) **All questions are compulsory. Internal options are given.**
4) **The numbers at right side represent the marks of the questions.**
5) **Start new section on new page.**
6) **Maintain sequence.**
7) **Draw neat labelled diagram as per instructions.**

SECTION - A

■ **Answer the following in short & to the point. Each question carries 2 marks.** **[10]**

1) Justify the statement "Nanotechnology plays by different rules".

OR

What one expect to improve in near future due to nanotechnology in Biotechnology and material science.

2) Write Faraday's law of electrolysis.

3) State the importance of pH in digestion of food.

4) What is isomerism? Write the isomers of butane.

OR

Give two points of differences between - L.P.G. and C.N.G.

5) As good citizen what steps will you take to conserve the energy sources?

SECTION - B

■ **Answer in short & to the point. Each question carries 2 marks.** **[10]**

6) Write short note on : Nakshatra.

7) How blood vessels work in the transportation of blood in human.

8) What is spinal cord? Write short note on it.

9) Give the two-two examples of the living being performing asexual and sexual reproduction.

OR

By which method paramoecium reproduce? Explain it.

10) In what way homologous organs give evidence for evolution?

SECTION - C

■ **Answer questions from 11 to 15 to the point. Each question carries 3 marks.** **[15]**

(Draw the diagram wherever necessary)

11) Describe the dispersion of light by glass prism with neat figure.

12) What will happen while placing a current carrying conductor in a magnetic field? Explain.

OR

Give the characteristic of magnetic field lines.

13) Mentioning the reasons for metallic corrosion describe the remedies to prevent it?

14) Write the chemical equation of preparing acetone and write its four properties.

OR

"Alcohol is harmful as drink". Explain this statement in detail.

15) Explain the components of ecosystem.

SECTION - D

■ **Answer questions 16 to 18 in detail, to the point. Each question carries 5 marks.** [15]

16) A student arranges an object in front of concave mirror and gets its virtual, lateral and enlarged image. You draw the diagram for this situation and obtain the mirror formula.

$$\frac{1}{u}+\frac{1}{v}=\frac{1}{f}$$

17) Explain with diagram the method for preparation of dihydrogen gas in laboratory. Write its four properties.

OR

Describe Frasch's method of extraction of sulphur with figure and state its four properties.

18) How plant respiration is different from animal respiration?

Describe the process of respiration in

a) root

b) stem

c) leaves

with suitable diagram.

OR

What are modes of Nutrion? Explain in detail various types of modes of nutrion in living being.

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