

English

Note : Do the assignments in your classwork notebook.

Integrated Assignment -1

Q1. Read the following passage.

1. Call it a blessing or a curse of Mother Nature, we have to breathe in over 10,000 litres of air in a day (more than four million litres in a year) to remain alive. By making it essential for life, God has wished that we try to keep the air we breathe clean. Everyone can see the food that is not clean and perhaps refrain from eating it, but one cannot stop breathing even if one can feel the air to be polluted.
2. Several harmful and noxious substances can contaminate the air we breathe. Generally, much is said and written about outdoor air pollution, most of which is due to vehicular and industrial exhausts.
3. Given the fact that most of us spend over 90% of our time indoors, it is most important to recognise that the air we breathe in at home or in offices can be polluted. It can be a cause of ill-health. Air pollutants that are generally present in very low concentrations can assume significance in closed ill-ventilated places.
4. The indoor air pollution can lead to allergic reactions and cause irritation to the skin, the eyes and the nose. But as is logical to assume, the brunt of insult by pollutants is borne by the lungs. It can lead to the development of fresh breathing problems, especially in those who have allergic tendencies, or it can worsen the existing respiratory illnesses like asthma and bronchitis.
5. There can be several sources of indoor air pollution. Tobacco smoke is one of the most important air pollutants in closed places. "Passive smoking" or environmental tobacco smoke (ETS) pollution can lead to all the harmful effects of tobacco smoking seen in the smokers in their non-smoking companions. ETS as a health hazard has been unequivocally proven and is also getting social recognition now. One can occasionally see signs displaying the all-important message: "Your smoking is injurious to my health" in offices and homes. The children of smoking parents are among the worst affected persons.
6. The exposure of young children to ETS leads to increased respiratory problems and hospital admissions as compared to non-exposed children. Several studies, including those done at the PGI, have shown an increased risk of lung cancer among women exposed to passive smoking. ETS also worsens the existing lung diseases like asthma and bronchitis. It may be responsible for the development of asthma in children.
7. The next most important source of indoor air pollution is the allergens. House dust mites (HDM) are very small insects not visible to the naked eye and are the commonest source of allergy in the house. They are ubiquitous and thrive in a warm and moist atmosphere. They breed very fast and are very difficult to eradicate. Modern houses present ample breeding spaces for them in the form of carpets, curtains, mattresses, pillows, etc.
8. Exposure to HDM can be prevented by the frequent washing of linen and by encasing the mattresses and pillows in a non-permeable cover. Pets form an important part of life for some of us. But they can add plenty of allergens to our indoor atmosphere. Cats are notorious for doing this. Fine particles from feline fur can remain stuck to the upholstery and carpets for a long time* even after the removal of the animal and lead to the worsening of asthma and skin allergies. Fortunately, owing to religious and social customs cats are not very popular pets in India. Dogs, however, are quite popular and can be as troublesome. Pets should be kept out of the bedrooms and washed frequently. To remove the fur particles one has to use vacuum cleaners as the ordinary broom and mop are not effective.
9. Moulds, fungi and several other microorganisms thrive in damp conditions and can lead to allergies as well as infections. Humidifiers in the air-conditioning plants provide an ideal environment for certain types of bacteria and have led to major outbreaks of pneumonia. It is important to clean regularly the coolers, air-conditioners and damp areas of the house such as cupboards, lofts, etc to minimise this risk.
10. Toxic gases can also pollute the indoor environment. Biomass fuels (wood, cowdung, dried plants) and coal, if burned inside, can lead to severe contamination by carbon monoxide (CO): The poor quality of stoves and other cooking or heating appliances that cause incomplete combustion of LPG can also lead to the emission of CO or nitrogen dioxide. Formaldehyde (a gas) can be released from adhesives that are used for fixing carpets, upholstery and also in making plywood and particleboard.

11. The gases are very toxic in high concentrations as may be encountered during industrial accidents, but even in very minimal amounts, as may be prevalent in homes and offices, they can cause irritation to the skin or the eyes, rashes, headache, dizziness and nausea. Improving the ventilation is an important preventive measure, besides trying to eliminate the source that may not be always feasible.
12. Other indoor pollutants are toxic chemicals like cleansing agents, pesticides, paints, solvents and inferior-quality personal-care products, especially aerosols. Very old crumbling pipes, boilers, insulation or false roofing can also be important sources. Asbestos is a hazardous product that can cause cancer in humans.
13. It is important to realise that the air we breathe at home may not be clean always and we must try to eliminate the source of pollution. We should give due consideration to ventilation.

A. Choose the most appropriate option: (1 x 4 = 4 marks)

(a) The Almighty wants that human beings.....

1. should try to breathe clean air
2. should not pay attention to pollutants
3. must ignore ETS
4. should become passive smokers

(b) The toxic gases cause

1. rashes
2. headache
3. dizziness
4. all of the above

(c) Air conditioning plants become the cause of

1. allergies
2. pneumonia
3. heart attack
4. infection

(d) Asbestos is a hazardous product because it can

1. cause cancer in humans
2. cause respiratory problems
3. prove fatal to the children
4. none of these

B. Answer the following questions briefly: 1 x 6 = 6

- (a) What is essential for our life? How?
- (b) Why should we pay attention to the quality of air we breathe indoor?
- (c) Name eight important sources of indoor air pollution.
- (d) What do you understand by ETS? How is it harmful? Give two instances.
- (e) How can the risk of allergies be minimised?
- (f) How can the toxic gases pollute the indoor environment?

C. Find words in the passage similar in meaning as: 1 x 2 = 2

- (a) make impure (Para 2)
- (b) clearly and unmistakably (Para 5)

Q2. Design a poster on 'Literacy for All'. (Word Limit- 50)

Q3. Write a letter to the Manager, Oberoi International, Lucknow, to find out the rates for conducting the wedding reception of your sister on their lawns, enquiring specifically about the catering cost per head, service and decoration charges and advance to be paid. You are Nandu/Nandini of Agra.

Q4. Last week as you were coming back from school you happened to see a huge plastic bag full of leftovers of food being flung into the middle of the road from a speeding car. You wondered how people can be so devoid of civic sense. Write an article in 150-200 words on why we lack civic sense and how civic sense can be inculcated in children at a very young age. You are Shiva/Shamini.

Q5. You had attended a workshop on personality development for students. Many eminent personalities had been present. Write a report in 150-200 words on how the workshop proved to be beneficial. You are Rajesh/Rajshree.

Q6. Read the following lines and answer with reference to the context:

*Far far from gusty waves these children's faces.
Like rootless weeds, the hair torn around their pallor:
The tall girl with her weighed-down head. The paper-
Seeming boy, with rat's eyes. The stunted unlucky heir
Of twisted bones, reciting a father's gnarled disease,
His lesson, from his desk. At back of the dim class
One unnoted, sweet and young. His eyes live in a dream,
Of squirrel's game, in tree room, other than this.*

- What does the poet mean by 'Far far from gusty waves'?
- Why does he refer to the children as 'rootless weeds'?
- Why is the head of the tall girl weighed-down?
- What do you understand by 'father's gnarled disease'?

7. How is Mukesh's attitude different from that of the rest of his family?

8. What is the significance of the state of total inactivity that the poet urges in the poem 'Keeping Quiet'?

9. What would happen to the village folks if they were made live near to the theatre?

10. 'The Last Lesson' clearly shows that adults play a role in motivating young learners. Cite examples from the lesson to prove your point. (Word Limit-120)

Integrated Assignment -2

Q1. Read the following passage.

You would have seen an increasing amount of "junk mail" showing up in your e-mail box. The so-called harmless activities of a small number of people are increasingly becoming a serious problem for the Internet.

Spam is the flooding of the Internet with many copies of the same message, in an attempt to force the message on people who would not otherwise choose to receive it.

Spam is basically electronic junk mail or junk newsgroup postings. It is sometimes confused with any unsolicited e-mail. But an old friend may also find your e-mail address on the Net and send you a message but this could hardly be called spam, even though it is unsolicited. Real spam is generally e-mail advertising for some product sent to a **10** mailing list or newsgroup.

In addition to wasting people's time with unwanted e-mail, spam also eats up a lot of network bandwidth. There are many organisations and individuals who have taken it upon themselves to fight spam with a variety of techniques. The problem is that because the Internet is public, there is very little that can be done to prevent spam, just as it is impossible to prevent junk mail.

One of the most recent examples of large-scale spamming was the hoax Ericsson e-mail about a free give away, something most people just cannot resist. The letter begins with a claim that since Nokia is giving away telephones, Ericsson will respond by giving away brand new WAP phone. But the recipient must forward the letter to a minimum of **20 20** people to receive the phone. The letter is signed by Anna Swan Executive Promotion Manager for Ericsson Marketing. It was later discovered that there was no such person at Ericsson.

There are numerous instances of these e-mails being used maliciously by someone who has a grudge against an ex-spouse, a public official, a former teacher or someone else with an e-mail address. The person mentioned in the e-mail ends up with thousands of requests from people looking for confirmation that the e-mail—which they actually had nothing to do with—is true.

Spamming works on our own greed to receive freebies. You are instructed by a total stranger (or a well meaning but not very bright friend) to forward a message you know **30** nothing about, except for the fact that maybe a friend passed it along to you and about 90 of their other very close friends.

Very often the victim can receive so many e-mails (and sometimes faxes and phone calls in the more malicious cases) that they have to get a new e-mail box or phone number— thereby ruining established personal and professional communication channels, which was the original intent of the sender.

Most spam is commercial advertising, often for dubious products, get-rich-quick schemes, or quasi-legal services. It costs the sender very little to send—most of the costs are paid for by the recipient or the carriers rather than by the sender.

There are two main types of spam, and they have different effects on internet users. **40** Cancellable Usenet spam is a single message sent to 20 or more Usenet newsgroups. Usenet spam is aimed at “lurkers”, people who read newsgroups but rarely or never post and give their address away. Usenet spam robs users of the utility of the newsgroups by overwhelming them with a barrage of advertising or other irrelevant posts. Furthermore, Usenet spam subverts the ability of system administrators and owners to manage the topics they accept on theft1 systems.

E-mail spam targets individual users with direct mail messages. They typically cost users money out-of-pocket to receive. Most of us read or receive our mail through dial-up accounts while the meter is running, so to speak.

There is not much really that can be done to protect yourself except that you can **50** ensure your relative safety by creating internet e-mail accounts like Hotmail or Yahoo which can be easily and frequently changed. Further, these accounts also generally offer the option of blocking senders from whom you get spam and you can also opt to block e-mail which has been copied to more than 20 people.

One can also keep oneself informed about spammers through the Blacklist of Internet Advertisers, a popular report that describes the offending activities of spammers that routinely distribute large mailings via e-mail or post unwelcome advertising on newsgroups. You can also visit www.spam.abuse.net.

Another organisation devoted to countering the destructive effects of spam is MAPS or the Mail Abuse Prevention System. If an offending spammer cannot be shut down, the **60** spammer’s ISP may contact MAPS with the subnet addresses allocated to the spammer so those specific addresses may be used instead of the IP address of the entire ISP. The MAPS website at <http://mail-abuse.org> will yield more useful information on how to counter and control spam.

Questions:

A. Choose the most appropriate option: (1 x 4 = 4 marks)

(a) Email spam victimises

1. group
2. individuals
3. males
4. females

(b) Usenet spam deprives the users of

1. the utility of the newsgroups
2. net facility
3. actual information
4. none of the above

(c) Name the organisation that counters the devastating effects of spam

1. MASP
2. MAPS
3. MPAS

4. MSAP

(d) Who has to pay most of the costs of spam?

1. senders
2. receivers
3. carriers
4. either (ii) or (iii)

B. Answer the following questions briefly: 1 x 6 = 6

- (a)** What is spam? What problems are caused to net surfers by spamming?
(b) Give an example of recent large scale spamming.
(c) How does spamming work? Whom does it hit—sender or receiver?
(d) What are the two main types of spams and their effects on Internet users?
(e) How can one protect oneself against spam? Give two options.
(f) Who uses e-mail spam frequently?

C. Find words in the passage similar in meaning as: 1 x 2 = 2

- (a)** a mischievous trick played on somebody for a joke (lines 10 to 20)
(b) disreputable or risky (lines 31 to 40)

Q2. Your school is organising a Bal Mela on 'Children's Day' in the school. The primary wing of the school is going to put up various stalls in the mela. Draft a notice giving details as well as inviting senior students to attend the same. You are Rajesh Roshan, Cultural Secretary. (Word Limit- 50)

Q3. S.P. Chaudhri of 160, Netaji Subhash Chandra Enclave, Calcutta bought a frost-free B.L.P. Refrigerator of 265 litres from "Wonder Home", Central Market, Kolkata. Having used it for about a month he finds that the freezing section of the refrigerator is not working at all. Write a letter to the Sales Manager of the firm complaining about it and requesting for replacement of the defective piece. The refrigerator enjoys a two years warranty against any technical fault.

Q4. You are extremely disturbed by the growing crime against the elderly people in your city. Write an article commenting upon the reasons for such crimes and how one can prevent them. You are Kushal Bhardwaj. (Word Limit-150-200)

Q5. As a staff reporter of The Times of India, Delhi, you are asked to cover an incident of daylight robbery on the outskirts of Delhi, while the inmates were present in the house. Write a report in 150-200 words.

Q6. Read the lines given below and answer the questions that follow:

*For once on the face of earth
Let's not speak in any language,
Let's stop for one second,
And not move our arms so much.
It would be an exotic moment
Without rush, without engines,
We would all be together
In a sudden strangeness.*

- a. What does speaking in 'any language' imply?
 - b. Why does the poet feel that it is important to keep quiet and suspend all activities?
 - c. What 'exotic moment' does the poet refer to?
 - d. Why would the strangeness be sudden?
- Q7. What, according to M Hamel, was the outcome of the neglect of the French language in the region?
Q8. What is ironical about the end of 'The Tiger King'?

Q9. What are the differences in the ambitions of Saheb and Mukesh?

Q10. In today's fast life, children neglect their ageing parents. What do you think children can do to have an involved and inclusive relationship with their elderly parents?

Q1. Read the following passage.

When plastic waste is burnt, a complex weave of toxic chemicals is released. Breaking down polyvinyl chloride (PVC) — used for packaging, toys and coating electrical wires — produces dioxin, an organochlorine which belongs to the family of Persistent Organic Pollutants (POPs). A recent Dioxin Assessment Report brought out by the United States Environment Protection Agency (USEPA) says the risk of getting cancer from dioxin is ten times higher than reported by the agency in 1994.

Yet the Delhi government is giving the green signal to a gasification project which will convert garbage into energy without removing plastic waste. Former transport minister Rajendra Gupta, the promoter of this project, says this is not necessary.

He claims no air pollution will be caused and that the ash produced can be used as manure. An earlier waste-to-energy project set up in Timarpur failed. The new one, built with Australian assistance, will cost ₹ 200 crore. It will generate 25 megawatts of power and gobble 1,000 tonnes of garbage every day.

“Technologies like gasification are a form of incineration,” says Madhumita Dutta, central coordinator with Toxics Link, New Delhi. Incineration merely transfers hazardous waste from a solid form to air, water and ash, she points out.

Toxins produced during incineration include acidic gases, heavy metals as well as dioxins and furans.

“The ‘manure’ will be hazardous and a problem to dispose,” says Dutta.

Municipal solid waste contains a mix of plastics. Breaking down this waste emits hydrochloric acid which attacks the respiratory system, skin and eyes, resulting in coughing, vomiting and nausea.

Polyethylene generates volatile compounds like formaldehyde and acetaldehyde, both suspected carcinogenic. Breathing styrene from polystyrene can cause leukaemia. Polyurethane is associated with asthma. Dioxin released by PVC is a powerful hormone disrupter and causes birth defects and reproductive problems. There is no threshold dose to prevent it and our bodies have no defence against it.

“Even the best run incinerators in the world have to deal with stringent norms, apart from contaminated filters and ash, making them hugely expensive to operate,” says Dutta. In Germany, air pollution devices accounted for two-thirds the cost of incineration. Despite such efforts, the European Dioxin Inventory noted that the input of dioxin into the atmosphere was the highest from incineration.

“India does not have the facility to test dioxin and the cost of setting one up is prohibitively expensive,” says Dutta.

Besides, Indian garbage has a low calorific content of about 800 cal/kg, since it has high moisture and requires additional fuel to burn. Toxics Link calculates that the electricity generated from such technology will cost between ₹ 5-7 per unit, which is six times higher than conventional energy. India has chosen a dioxin preventive route and burning of chlorinated plastics is prohibited under Municipal Solid Waste and Biomedical Rules.

Nearly 80 per cent of Indian garbage is recyclable or compostable. Resident associations, the informal sector and the municipal corporation can make Delhi’s garbage disappear in a sustainable manner.

“Instead, the government promotes end of pipeline solutions,” says Dutta.

Questions:

A. Choose the most appropriate option: (1 x 4 = 4 marks)

(a) Dioxine causes

1. cancer
2. heart attack
3. sickness
4. hypertension

(b) The gasification process transforms

1. energy into garbage
2. garbage into energy
3. water into energy

4. none of the above

(c) Garbage can be converted into energy by

1. gasification
2. gratification
3. a chemical process
4. incinators

(d) Indian garbage contains

1. low moisture
2. high moisture
3. no moisture
4. none of these

B. Answer the following questions briefly: 1 x 6 = 6

- (a)** Which toxic chemical is released on burning plastic waste? How is it harmful?
(b) What is the aim of waste-to-energy project? What is likely to happen during incineration?
(c) How will burning plastic adversely impact the health of citizens?
(d) What two arguments are advanced against the use of incinerators?
(e) Why would gasification of waste prove a wasteful luxury in India?
(f) What facts are revealed in the passage pertaining to Indian garbage?

C. Find words in the passage similar in meaning as: 1 x 2 = 2

- (a)** Waste material
(b) Swallow

Q2. Tourism Department, Government of Uttaranchal has launched an ambitious plan to develop adventure sports and eco tourism activities in the state. Prepare a suitable poster for display at important public places /publication in newspapers.

Q3. You are Rohit / Roopali. As President of the Students' Council of St. Francis Sr. Secondary School, Bangalore you have invited a visiting Russian Ballet troupe to give a performance in your school on the occasion of its Golden Jubilee celebrations. Write a notice in about 50 words informing the students about this event.

Q4. You are Chetan Sharma, a commerce graduate from Delhi University. You are seeking a suitable job. You came across an advertisement in The Times of India, inviting young and dynamic fresh graduates as sales assistants in a reputed company. Apply for the said job to Box No. 8365, C/o The Times of India, New Delhi.

Q5. 'Atrocities on women have no doubt changed their forms but these are day-to-day phenomena in our male dominated society'. This is the topic for debate competition in your school. Write a speech in favour or against the motion. (Word Limit-150-200)

Q6. You are chosen for representing your school at the regional level inter-school debate contest. Prepare a debate for the same on the topic given below:
'Newspapers ought to contain more news and fewer advertisements'

Q7. Read the lines given below and answer the questions that follow:

*Surely, Shakespeare is wicked, the map is a bad example,
With ships and sun and love tempting them to steal-
For lives that slyly turn in their cramped holes*

*From fog to endless night? On their slag heap, these children
Wear skins peeped through their bones and spectacles of steel
With mended glass, like bottle bits on stone.*

- Why does the poet refer to Shakespeare as 'wicked' and map 'a bad example'?
 - What does 'from fog to endless night' imply?
 - Explain 'wear skins peeped through their bones'.
 - Why does the poet compare skeleton of slum dwelling children with glass pieces?
- Q8. How does the poet bring out the images of disharmony between man and nature in 'Keeping Quiet'?
- Q9. Why are the bangle makers unable to organize themselves into a cooperative?
- Q10. In the excerpt, 'The Lost Spring-Stories of Childhood', Anees Jung examines how grinding poverty and tradition condemn children to a life of exploitation. Elucidate. (Word Limit-120)

Physics

1. Prepare a project of physics which should be research or experiment based (working project), where every aspect of the topic selected should be discussed. The project should have the following key aspects:

- Certificate
- Acknowledgement
- Why this was selected? (Related to daily life)
- Introduction
- Details of the project
- Experiment
- Working
- Observations
- Analysis
- Result
- Future scope
- Bibliography (mention the links)

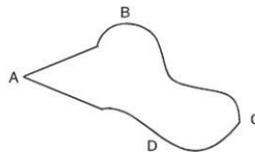
Project should be aesthetically prepared. Print out of the content is not allowed, only data or pictures can be printed and the same has to be approved first.

2. Complete the worksheet given in the notebook.

Note : Do the worksheet in your notebook.

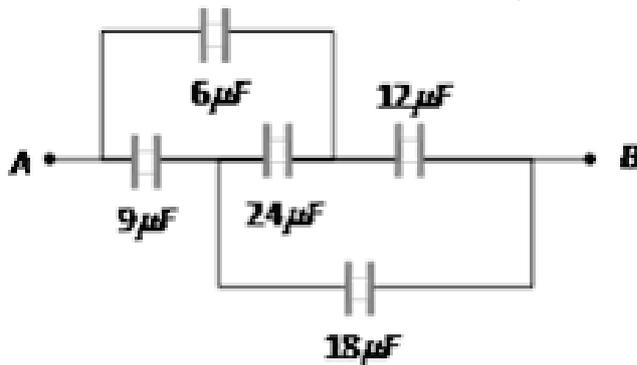
WORKSHEET CLASS XII PHYSICS (2019-20)

- Draw schematically an equipotential surface of a uniform electrostatic field along x-axis.
- Two point charges repel each other with a force F when placed in water of dielectric constant 81. What will be the force between them when placed the same distance apart in air?
- Net capacitance of three identical capacitors connected in parallel is 12 microfarad. What will be the net capacitance when two of them are connected in (i) parallel (ii) series?
- Draw the electric field vs distance (from the centre) graph for (i) a long charged rod having linear charge density $\lambda < 0$ (ii) spherical shell of radius R and charge $Q > 0$.
- If the metallic conductor shown in the figure is continuously charged from which of the points A, B, C or D does the charge leak first. Justify.

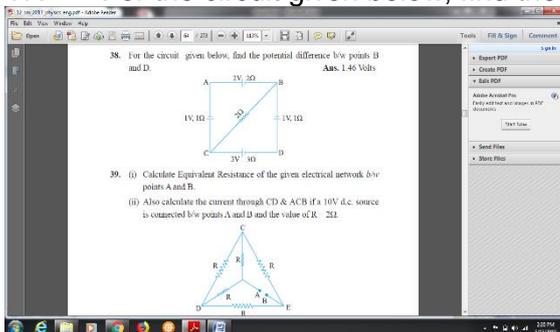


- If an electron is accelerated by a Potential difference of 1 Volt, Calculate the gain in energy in Joule and electron volt.
- You are required to select a carbon resistor of resistance $47k\Omega + 10\%$ from a large collection. What should be the sequence of color bands used to code it?
- A copper wire of resistance R is uniformly stretched till its length is increased to n times its original length. What will be its new resistance?
- Calculate the work required to separate two charges $5\mu\text{C}$ and $-2\mu\text{C}$ placed at $(-3\text{ cm}, 0, 0)$ and $(+3\text{ cm}, 0, 0)$ infinitely away from each other.

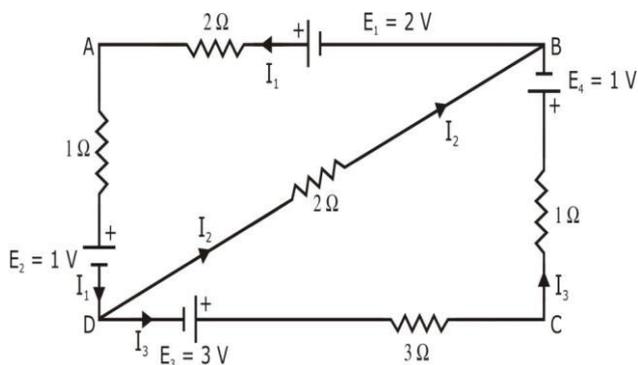
10. What is meant by dielectric polarisation? Why does the electric field inside a dielectric decreases when it is placed in an external field?
11. Define mobility of electron in a conductor. How does electron mobility change when (i) temperature of conductor is decreased (ii) Applied potential difference is doubled at constant temperature?
12. A battery has an emf of 12V and an internal resistance of 2Ω . Calculate the potential difference between the terminal of cell if (a) current is drawn from the battery (b) battery is charged by an external source.
13. In a meter bridge, the balance point is found to be 39.5 cm from end A. The known resistance Y is 12.5Ω . Determine unknown resistance X.
14. A conducting slab of thickness ' t ' is introduced between the plates of a parallel plate capacitor, separated by a distance d ($t < d$). Derive an expression for the capacitance of the capacitor. What will be its capacitance when $t = d$?
15. A slab of material of dielectric constant K has the same area as the plates of parallel plate capacitor but its thickness is where d is separation between plates, How does the capacitance change when the slab is inserted between the plates?
16. Find the equivalent capacitance for the given circuit.



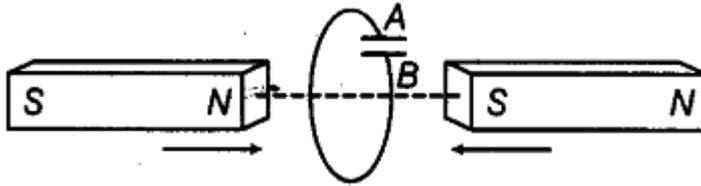
17. For the circuit given below, find the potential difference b/w points B and D.



18. Calculate the value of electric current I_1 , I_2 , I_3 , in the given electrical network.



19. When resistance of 2Ω is connected across the terminals of a battery, the current is 0.5A. When the resistance across the terminal is 5Ω , the current is 0.25A. (i) Determine the emf of the battery (ii) What will be current drawn from the cell when it is short circuited.
20. Define current density. Give its SI unit. Whether it is vector or scalar? How does it vary when (i) potential difference across wire increases (ii) length of wire increases (iii) temperature of wire increases (iv) Area of cross-section of wire increases justify your answer.
21. Predict the polarity of the capacitor in the situation describes below:



22. A hollow cylindrical box of length 1m and area of cross-section 25cm^2 is placed in a three-dimensional coordinate system as shown in the figure. The electric field in the region is given by $\vec{E} = 50x\hat{i}$, where E is in NC^{-1} and x is in metres. Find:

- (i) Net flux through the cylinder.
- (ii) Charge enclosed by the cylinder.

23. (a) Derive an expression for the electric field E due to a dipole of length " $2a$ " at a point distant r from the center of the dipole on the axial line.

a graph of E versus r for $r \gg a$.

(c) If this dipole were kept in a uniform external electric field E_0 , diagrammatically represent the position of the dipole in stable and unstable equilibrium and write the expressions for the torque acting on the dipole in both the cases.

24. Estimate the average drift speed of conduction electrons in a copper wire of cross-sectional area $1.0 \times 10^{-7} \text{m}^2$ carrying a current of $1.5 \times 10^{-19} \text{A}$. Assume the density of conduction electrons to be $9 \times 10^{28} \text{m}^{-3}$.

NOTE: Begin with reading the chapter Magnetism in the text book. Attempt both sets of May assessment in notebook. Complete your assignments and Back exercise questions done till date.

Chemistry

Please find the file attached separately.

Mathematics

General Instructions :

1. Paste this worksheet and do it in your mathematics notebook.
2. Complete all the assignments (if left) till topic covered in your mathematics notebook of CH- 1,2,5.
3. Assignments are uploaded on entab.
4. Prepare one project aesthetically and relatable to real life as per CBSE guidelines given on CBSE website where every aspect of the topic selected should be discussed. It should be of at least 20-25 pages. Print out of content is not allowed, only pictures can be printed.

The project should have the following key aspects:

- Certificate
- Acknowledgement
- Why this was selected?
- Index
- Introduction
- Details of the project
- Principle involved
- Bibliography (mention the links/reference)

ASSIGNMENT-1

Relation and Functions

1 Mark Questions

Q1 A relation R in a Set A is called, if each element of A is related to every element of A

Q2 $\{x \in \mathbb{R} : x \leq 1\}$ and S be the subset of $A \circ$ defined by $\{y \in \mathbb{R} : y^2 = 1\}$. Is it a function?

- Q3** $\mathbb{N} \longrightarrow \mathbb{N}$ is defined by $f(x) = 2x \quad \forall x \in \mathbb{N}$, then is f a bijection?
- Q4** Let $X = \{1, 2, 3, 4\}$. A function is defined from X to \mathbb{N} as $R = \{(x, f(x)) : x \in X, f(x) = {}^xP_{x-1}\}$. Then find the range of f .
- Q5** and $g(x) = cx + d$, then show that $f[g(x)] - g[f(x)]$ is equivalent to $f(d) - g(b)$.
- Q6** $\frac{f+b}{f+d}$, then if $f \circ f = x$, then find d in terms of a
- Q8** If $f : \mathbb{R} \rightarrow \mathbb{R}$ and $g : \mathbb{R} \rightarrow \mathbb{R}$ defined by $f(x) = 2x + 3$ and $g(x) = x^2 + 7$, then find the value of x for which $f(g(x)) = 25$.
- Q9** Find the Total number of equivalence relations defined in the set $S = \{a, b, c\}$
- Q10** Find whether the relation R in the set $\{1, 2, 3\}$ given by $R = \{(1, 1), (2, 2), (3, 3), (1, 2), (2, 3)\}$ is reflexive, symmetric or transitive.
- Q11** Show that the function $f : \mathbb{N} \longrightarrow \mathbb{N}$, given by $f(x) = 2x$, is one-one but not onto.
- Q12** Find $g \circ f$ and $f \circ g$, if $f : \mathbb{R} \longrightarrow \mathbb{R}$ and $g : \mathbb{R} \longrightarrow \mathbb{R}$ are given by $f(x) = \cos x$ and $g(x) = 3x^2$.
- Q13** Find the number of all one-one functions from set $A = \{1, 2, 3\}$ to itself.
- Q14** Let $A = \{1, 2, 3\}$. Then find the number of equivalence relations containing $(1, 2)$.
- Q15** State with reason whether following functions have inverse $f : \{1, 2, 3, 4\} \rightarrow \{10\}$ with $f = \{(1, 10), (2, 10), (3, 10), (4, 10)\}$
- 4 Marks Questions**
- Q1** Let $f : \mathbb{N} \rightarrow \mathbb{R}$ be a function defined as $f(x) = 4x^2 + 12x + 15$. Show that $f : \mathbb{N} \rightarrow S$ where, S is the range of f is invertible. Find the inverse of f
- Q2** Show that the Relation R in the set $A = \{x \in \mathbb{Z} : 0 \leq x \leq 12\}$ is an equivalence relation.
 $R = \{(a, b) : |a - b| \text{ is a multiple of } 4\}$
- Q3** Show that the function $f : \mathbb{R} \rightarrow \mathbb{R}$ given by $f(x) = \begin{cases} 1 & \text{if } x > 0 \\ 0 & \text{if } x = 0 \\ -1 & \text{if } x < 0 \end{cases}$ is neither one-one nor onto
- Q4** If $A = \mathbb{R} - \{3\}$ and $B = \mathbb{R} - \{1\}$, consider the function $f : A \rightarrow B$ defined by $f(x) = \frac{x-2}{x-3}$. Is f one-one and onto? Justify your answer.
- Q5** Let $f : \mathbb{R} \rightarrow \mathbb{R}$, $g : \mathbb{R} \rightarrow \mathbb{R}$, be two functions given by $f(x) = 2x - 3$, $g(x) = x^3 + 5$. Find $f \circ g^{-1}(x)$

Q6 Check the injectivity and surjectivity of the following:

(i) $f: \mathbb{N} \rightarrow \mathbb{N}$ given by $f(x) = x^2$

(ii). $f: \mathbb{R} \rightarrow \mathbb{R}$ given by $f(x) = x^2$

Q7 Determine whether the following relations are reflexive, symmetric, and transitive if relation R, in the set N of Natural numbers is defined as $R = \{(x, y) : y = x + 5 \text{ and } x < 4\}$.

Q10 Let $A = \{-1, 0, 1, 2\}$ $B = \{-4, -2, 0, 2\}$ and $f, g: A \rightarrow B$ be function defined by

$f(x) = x^2 - x, x \in A$ and $g(x) = 2 \left| x - \frac{1}{2} \right| - 1, x \in A$. Then, are f and g equal? Justify your answer.

Q11 Let f, g and h be functions from $\mathbb{R} \rightarrow \mathbb{R}$. Then show that

(i) $(f + g) \circ h = f \circ h + g \circ h$

(ii) $(f \cdot g) \circ h = (f \circ h) \cdot (g \circ h)$

Q12 If $f: \mathbb{R} \rightarrow \mathbb{R}$ be a function defined by $f(x) = 4x^3 - 7$. Then show that f is bijection.

Q13 Show that $f: [-1, 1] \rightarrow \mathbb{R}$, given by $f(x) = x/(x+2)$ is one-one. Find the inverse of the function $f: [-1, 1] \rightarrow \mathbb{R}$ & Range f .

Q14 Let N be the set of all natural numbers. R be the relation on $\mathbb{N} \times \mathbb{N}$ defined by $(a, b) R (c, d)$ iff $ad = bc \forall a, b, c, d \in \mathbb{N}$. Show that R is equivalence.

Q15 Let $X = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$. Let R_1 be a relation in X given by $R_1 = \{(x, y) : x - y \text{ is divisible by } 3\}$ and R_2 be another relation on X given by $R_2 = \{(x, y) : \{x, y\} \subset \{1, 4, 7\} \text{ or } \{x, y\} \subset \{2, 5, 8\} \text{ or } \{x, y\} \subset \{3, 6, 9\}\}$. Show that $R_1 = R_2$.

6 Marks Questions

Q1 Let N be the set of all natural numbers. R be the relation on $\mathbb{N} \times \mathbb{N}$ defined by $(a, b) R (c, d)$ iff $ad = bc \forall a, b, c, d \in \mathbb{N}$. Show that R is Equivalence relation

Q2 Let $Z \rightarrow Z$ defined by $f(n) = 3n \forall n \in z$ and $g: Z \rightarrow Z$ be defined by

$g(n) = \begin{cases} \frac{n}{3} & \text{if } n \text{ is a multiple of } 3 \\ 0 & \text{if } n \text{ is not a multiple of } 3 \end{cases}$ show that $g \circ f = I_Z$ and

$f \circ g \neq I_Z$

Q3 A function has been defined by the rule as follows

$f(x) = \begin{cases} x^2 & x \leq 0 \\ x & 0 < x \leq 1 \\ \frac{1}{x} & x > 1 \end{cases}$

Is the function one-one onto

Q4 A function f over the set of real numbers is defined as $f(x) = \begin{cases} 2x+1 & 0 \leq x < 2 \\ x-2 & 2 \leq x \leq 5 \end{cases}$ Find whether the function is one-one or onto

Q5 If $f(x) = \frac{(4x+3)}{(6x-4)}$, Show that $f \circ f(x) = x$ for all $x \neq \frac{2}{3}$. What is the inverse of $f(x)$?

ASSIGNMENT OF CHAPTER 2

Inverse Trigonometric Functions

1 Mark Questions

Q1 Find the value of $\tan(\cos^{-1}4/5 + \tan^{-1}2/3)$

Q2 If we consider only the Principal value of the inverse trigonometric functions, then find the value of $\tan\left(\cos^{-1}\frac{1}{5\sqrt{2}} - \sin^{-1}\frac{4}{\sqrt{17}}\right)$

Q3 If $\tan^{-1}(a/x) + \tan^{-1}(b/x) = \pi/2$, then $x =$

Q4 If $(a < 0)$ and $x \in (-a, a)$, simplify $\tan^{-1}\left(\frac{x}{\sqrt{a^2-x^2}}\right)$

Q5 If $x + y + z = xyz$, then the value of $\tan^{-1}x + \tan^{-1}y + \tan^{-1}z =$

Q6 Find The value of $\tan\left(\frac{1}{2}\cos^{-1}\frac{\sqrt{5}}{3}\right)$

Q7 If $\sin^{-1}\left(\frac{3}{5}\right) = x$ find the value of $\cos x$.

Q8 Find the principal value of $\cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$

Q9 If $\sin^{-1}x = y$ then what will be the range of y ?

Q10 Show that $\sin^{-1}(2x\sqrt{1-x^2}) = 2\sin^{-1}x$

Q11 Find the value of $\cos^{-1}\left(\cos\frac{13\pi}{6}\right)$

Q12 $\tan^{-1}\left(\frac{2}{11}\right) + \tan^{-1}\left(\frac{7}{24}\right)$

Find the value of

Q13 $\tan^{-1}\left(\frac{3a^2x - x^3}{a^3 - 3ax^2}\right)$

Find the value of

Q14 Express $2 \tan^{-1} x = \dots\dots\dots$ in terms of Sine and cosine

Q15 Write down the domain and Range of $\tan^{-1} x$

4 Marks Questions

Q1 Solve of the equation $\tan^{-1}(x - 1) + \tan^{-1}x + \tan^{-1}(x + 1) = \tan^{-1}(3x)$

Q2 Solve of the equation $\sin^{-1} 6x + \sin^{-1} 6\sqrt{3} x = -\frac{\pi}{2}$

Q3 Find the value of $\sin\left(2 \tan^{-1} \frac{1}{3}\right) + \cos\left(\tan^{-1} 2\sqrt{2}\right)$

Q4 If $\sin^{-1} \frac{1}{x} = \sin^{-1} \frac{1}{a} + \sin^{-1} \frac{1}{b}$, then find the value of x

Q5 Evaluate $\cos^{-1} x + \cos^{-1} \left(\frac{x}{2} + \frac{1}{2} \sqrt{3 - 3x^2}\right) \left(\frac{1}{2} \leq x \leq 1\right)$

Q6 Find the value of $\cos\left(2 \cos^{-1} x + \sin^{-1} x\right)$ at $x = \frac{1}{5}$

Q7 $\tan^{-1} x + \cos^{-1} \frac{y}{\sqrt{1+y^2}} = \sin^{-1} \frac{3}{\sqrt{10}}$?

What is the +ive integral solution of

Q8 Find value of $\cos^{-1}[\cos\{2 \cot^{-1}(\sqrt{2} - 1)\}]$

Q9 If $\alpha = \sin^{-1} \frac{\sqrt{3}}{2} + \sin^{-1} \frac{1}{3}$ and $\beta = \cos^{-1} \frac{\sqrt{3}}{2} + \cos^{-1} \frac{1}{3}$, then find whether $\alpha > \beta$

Q10 If $\sin^{-1}(1-x) = 2 \sin^{-1} x + \frac{\pi}{2}$, then solve for x.

Q11 Find the value of x satisfying the equation $3 \tan^{-1} \frac{1}{2 + \sqrt{3}} - \tan^{-1} \frac{1}{x} = \tan^{-1} \frac{1}{3}$

Q12 Find the solution of equation $\sin^{-1} x + \sin^{-1} 2x = \frac{\pi}{3}$

Q13 Write the Simplified form of $\tan\left(\frac{\pi}{4} + \frac{1}{2} \cos^{-1} \frac{a}{b}\right) + \tan\left(\frac{\pi}{4} - \frac{1}{2} \cos^{-1} \frac{a}{b}\right) = \frac{b}{a}$

Q14 Evaluate $\sin^{-1} \left\{ \cot \left(\sin^{-1} \sqrt{\frac{2-\sqrt{3}}{4}} \right) + \cos^{-1} \frac{\sqrt{12}}{4} + \sec^{-1} \sqrt{2} \right\}$

Evaluate

Q15 Find the value of $\tan \left(\frac{\pi}{4} + \frac{1}{2} \cos^{-1} x \right) + \tan \left(\frac{\pi}{4} - \frac{1}{2} \cos^{-1} x \right), x \neq 0$

6 Marks Questions

Q1 Express $\tan^{-1} \left(\frac{\cos x}{1-\sin x} \right), \frac{\pi}{2} < x < \frac{\pi}{2}$ in the simplest form

Q2 Prove that

$$\tan^{-1} \left(\frac{(\sqrt{1+x} - \sqrt{1-x})}{\sqrt{1+x} + \sqrt{1-x}} \right) = \frac{\pi}{4} - \frac{1}{2} \cos^{-1} x$$

Q3 Solve $\tan^{-1} 2x + \tan^{-1} 3x = \frac{\pi}{4}$

Q4 $\tan^{-1} \frac{12}{13} + \cos^{-1} \frac{4}{5} + \tan^{-1} \frac{63}{16} = \pi$

Q5 Find the value of:

$$\left[\frac{2x}{1+x^2} + \cos^{-1} \frac{1-y^2}{1+y^2} \right], |x| < 1, y > 0 \text{ and } xy > 1$$

Q6 Prove that $2 \tan^{-1} \{ \tan \alpha / 2 \tan(\pi/4 - \beta/2) \} = \tan^{-1} \{ \sin \alpha \cos \beta / (\sin \beta + \cos \alpha) \}$

ASSIGNMENT OF CHAPTER 5
CONTINUITY AND DIFFERENTIABILITY

1 Mark Questions

Q1 Check the continuity of the function $f(x) = \begin{cases} 1, & \text{if } x \leq 0 \\ 2, & \text{if } x > 0 \end{cases}$

Q2 Check the continuity of the function $f(x) = |x|$ at $x = 0$

Q3 Check the continuity of the function $f(x) = \sin x + x^2$ at $x = \pi$

Q4 Examine the continuity of the function $f(x) = |x|$

Q5 Write the points of discontinuity of the function $f(x) = [x]$ where $[x]$ denotes the greatest integer function less than or equal to x .

Q6 Write the points of discontinuity of the function $f(x) = \frac{x^2 - 25}{x - 5}$.

- Q7 Give an example of a function which is continuous but not differentiable.
- Q8 Find the derivative of $\sin(\cos^2(\sqrt{x}))$.
- Q9 Find the points in the open interval (0, 3) where the greatest integer function $f(x) = [x]$ is not differentiable.
- Q10 Write the derivative of the function $f(x) = \tan^{-1} \sqrt{\sin x}$ w. r. to x.
- Q11 Is it true that $\log(x^{\sin x} + \cos^{\sin x} x) = \sin x \log x + \sin x \log \cos x$?
- Q12 If $x = f(t)$ and $y = g(t)$, then is $\frac{d^2 y}{dx^2} = \frac{d^2 y / dt^2}{d^2 x / dt^2}$?
- Q13 Check the applicability of Rolle's theorem for $f(x) = [x]$ on [1, 5].
- Q14 Discuss the continuity of the function $f(x) = \sin|x|$
- Q15 Discuss the continuity of the function $f(x) = |x| - |x-1|$

4 Mark Questions

- Q1 Differentiate $\log(x + \sqrt{1+x^2})$
- Q2 Differentiate $\frac{\sqrt{a+x} + \sqrt{a-x}}{\sqrt{a+x} - \sqrt{a-x}}$
- Q3 Find $\frac{dy}{dx}$ for $\sin(xy) + \frac{x}{y} = x^2 - y$
- Q4 If $2^x + 2^y = 2^{x+y}$, show that $\frac{dy}{dx} = -2^{y-x}$
- Q5 If $\tan^{-1}\left(\frac{x^2 - y^2}{x^2 + y^2}\right) = a$, show that $\frac{dy}{dx} = \frac{x(1 - \tan a)}{y(1 + \tan a)}$
- Q6 Differentiate $\tan^{-1}\left(\frac{a \cos x - b \sin x}{b \cos x + a \sin x}\right)$
- Q7 Differentiate $x^x + x^a + a^x + a^a$
- Q8 Differentiate $\left(x + \frac{1}{x}\right)^x + x^{\left(x + \frac{1}{x}\right)}$
- Q9 Find $\frac{dy}{dx}$ for $x = \frac{\sin^3 \theta}{\sqrt{\cos 2\theta}}$, $y = \frac{\cos^3 \theta}{\sqrt{\cos 2\theta}}$
- Q10 Find $\frac{dy}{dx}$ for $x = \sqrt{a^{\sin^{-1} t}}$, $y = \sqrt{a^{\cos^{-1} t}}$
- Q11 If $y = (\tan^{-1} x)^2$ show that $(1+x^2)^2 \frac{d^2 y}{dx^2} + 2x(1+x^2) \frac{dy}{dx} - 2 = 0$
- Q12 If $\sin y = x \cos(a+y)$, show that $\frac{dy}{dx} = \frac{\cos^2(a+y)}{\cos a}$

Q13

If $y\sqrt{1-x^2} + x\sqrt{1-y^2} = 1$, show that $\frac{dy}{dx} = -\sqrt{\frac{1-y^2}{1-x^2}}$

Q14

If $x \sin(a+y) + \sin a \cos(a+y) = 0$, show that $\frac{dy}{dx} = \frac{\sin^2(a+y)}{\sin a}$

Q15

$$f(x) = \begin{cases} \frac{x-|x|}{x}, & x \neq 0 \\ 2, & x = 0 \end{cases}$$

Check the continuity of the function at $x = 0$

6 Mark Questions

Q1

If $y = (\sin^{-1} x)^2$ show that $(1-x^2)\frac{d^2y}{dx^2} - x\frac{dy}{dx} = 2$

Q2

Find $\frac{d^2y}{dx^2}$ for the function $x = a(\theta + \sin \theta)$, $y = a(1 + \cos \theta)$ at $\theta = \frac{\pi}{2}$

Q3

Find $\frac{dy}{dx}$ for $\tan^{-1}(\sqrt{1+x^2} + x)$

Q4

Find $\frac{dy}{dx}$ for $\tan(x+y) + \tan(x-y) = 1$

Q5

Show that the function defined by $g(x) = x - [x]$ is discontinuous at all integral points.

Biology

- Investigatory project in biology – A project based on experimental or case study based is to be prepared. No print outs allowed, must be hand written. Project must be approved first as discussed (through mail). It must have the following details in it.
 - Certificate
 - Acknowledgment
 - Index
 - Abstract
 - Introduction
 - Materials required
 - Procedure
 - Observation
 - Conclusion
 - Reference
- Solve 2018 and 2019 CBSE biology board exam paper in your notebook from the topics covered till date.
- Attempt both sets of May end assessment in note book.
- Begin reading with Molecular basis of inheritance and Evolution.
- Attempt the following questions in your notebook :-
 - Suggest a possible explanation why the seeds in a pea are arranged in a row, where as those in tomatoes are scattered in the juicy pulp?
 - Although sexual reproduction is a long drawn, energy –intensive complex form of reproduction, many groups of organism in kingdom animalia and plantae prefer this mode of reproduction give reasons.
 - Make a list of any three out breeding devices that flowering plants have developed and explain how they help to encourage cross pollination.
 - Give the other name of the following, i) Pollen sacs ii) ovule iii) Pollen grains iv) Embryo sac.
 - Explain with the hormonal control of spermatogenesis and oogenesis in humans.

- f. What are the assisted reproductive technologies practiced to help infertile couples? Describe any four techniques.
- g. Bring out one main difference between CuT and LNG-20.
- h. What is menstrual cycle? Which hormones regulate menstrual cycle?
- i. Draw a diagram of male and female reproductive system.
- j. Draw a well labelled diagram of seminiferous tubule of a human male.
- k. Give a schematic representation of oogenesis in human. Mention the number of chromosomes at each stage. Correlate the life phase of individual with the stage of the process.
- l. STDs are a threat to reproductive health. Describe any such two diseases and suggest preventive measures.
- m. Mendel publishes his work on inheritance of character in 1865, but it remained unrecognized till 1900. Give three reasons for the delay in accepting his work.
- n. Differentiate between monohybrid cross and dihybrid cross.
- o. Explain incomplete dominance and Co-dominance in organism with help of example.
- p. Describe the nature of inheritance of the ABO type of blood group in humans. In which ways does this inheritance differ from that of height of the plant in garden pea?

Computer Science

The holiday assignment will be uploaded by 6 June 2019

Psychology

Note : Do the assignment in your notebook.

LEARNING CHECKS (1 MARK)

Q1 is the study of how the qualities of living things are passed on in their genes

Q2 Is the dynamic situation-specific reaction to stress.

a. Exhaustion b) Coping c) Management of stress d) Dealing with stress.

Q 3 The reaction of external stressors is called---

a. Strain b) Stress c) Tension d) Stress Response

Q 4 The are fat, soft and round.

a. Endomorphs b) Ectomorphs c) Mesomorphs d) Metamorphs

Q 5 The ego obeys the Principle

a. Pleasure b) Reality c) Moral d) Perfection

Q 6 have been devised as one method for uncovering unconscious motives

a. Inventory b) Projective tests c) Behavioural assessment d) Situational tests.

Q 7 Entrepreneurial competence refers to

a. Respect for social order b) Self exposure c) Discrimination d) Commitment

Q 8 Who pioneered the construction of intelligence test in Hindi?

a. C.B . Rice b) S.M. Mohsin c) Mahalanobis d) Uday Pareek

Q 9 What do you mean by psychological assessment?

Q 10 What are Cardinal traits?

II. VERY SHORT ANSWER TYPE QUESTIONS (2 marks)

Q 11 What is an intelligence test?

Q 12 What is CAS?

Q 13 What is Buddhi?

Q 14 What is Mental Age?

Q 15 What is Libido?

Q 16 Explain interactional approach of personality.

Q 17 What do you understand by social identity?

Q 18 Define Stress.

Q 19 What are life skills?

Q 20 Describe the meaning of burnout.

III SHORT ANSWER TYPE QUESTIONS (3 MARKS)

Q 21 What is stress resistant personality?

Q 22 What is self-esteem?

Q 23 Explain interactional approach of personality.

Q 24 What functions do dream serve according to Freud?

Q 25 Discuss Behavioural Rating to assess personality.

Q 26 Who is a healthy person?

Q 27 What is case study?

Q 28 What is emotional intelligence?

Q 29 Define giftedness. What are the characteristics of giftedness.

Q 30 Explain two factor theory of intelligence.

IV SHORT ANSWER TYPE QUESTION (4 MARKS)

Q 31 What are the methods used for psychological assessment?

Q 32 Differentiate between simultaneous processing and successive processing

Q 33 Differentiate between source traits and surface traits. Give suitable examples.

Q 34 How do post Freudians differ from Freud?

Q 35 What are stress management techniques?

Q 36 "Many people are their own enemies and do precisely those things that are bad for their health." Discuss.

V LONG ANSWER TYPE QUESTIONS

Q 37 What are the effects of stress on psychological functioning. Explain.

Q 38 Discuss various projective techniques to assess personality.

Q 39 Discuss psycho sexual stages of development.

Q 40 Discuss how interplay of nature and nurture influences intelligence. Distinguish between culture fair and culture biased test.

Q4 Who is credited with establishment of first psychological laboratory and when?

Q5 Mind is the other name of brain

- a. True
- b. False

Q6 model suggests that scientific advancement can take place if you have a theory to explain a phenomenon.

Q 7 In conducting the survey the investigator selects a few subjects called a and then makes the decision regarding the more general significance of his findings

- a. Sample
- b. Data

Q8 Define Hypothesis

Q9 What is Reliability?

Q10 In I.P. Pavlov was awarded the Nobel Prize for his investigation of grandular and neural factors in digestion.

II VERY SHORT ANSWER TYPE QUESTION (2MARKS)

Q 11 What are the characterstics of scientic research?

Q 12 What is experimental method?

Q 13 What is meant by Quasi experiment?

III SHORT ANSWER TYPE QUESTION (3 MARKS)

Q14 Differentiate between basic and applied psychology

Q 15 What is Correlation method?

Q 16 What is Quasi Experiement?

IV SHORT ANSWER TYPE (4 MARKS)

Q 16 Discuss the subject matter and application of psychology in everyday life

Q 17 What is variable? Discuss different types of Variable

Q 18 What is data? What are the factors affecting data collection?

V LONG ANSWER TYPE (6 MARKS)

Q 19 Discuss Various aspects of ethical principles.

Q 20 What are the basic concerns of modern psychology?

ASSIGNMENT 2

CASE PROFILE (CBSE)

Developing a case profile would primarily involve the use of qualitative techniques, such as observation, interview, survey, etc. During the course of preparing a case profile, the students would gain a first-hand experience in the use of these qualitative techniques. The main objective of preparing a case profile is to understand the individual in totality. This would further help in establishing the cause and effect relationship more accurately. The students may prepare a case profile of an individual who has excelled in areas like sports, academics, music, etc. or having special needs like learning disability, autism, Down's syndrome, etc. or those with interpersonal social problems, i.e. poor body image, obesity, temper tantrums, substance abuse, not getting along with peers, withdrawn, etc. They may be encouraged to find out the background information and developmental history of the individual. The students are required to

identify the method of inquiry, i.e. interview or observation that they would like to undertake to get complete information of the case.

A case profile may be prepared based on the suggested format. The students may be encouraged to reflect on the causes to draw some preliminary conclusions.

Suggested Format for Preparing a Case Profile

A format for case presentation covering broad aspects is given below. It is suggested that the case be developed in a narrative format along the following points:

1. Introduction

- A brief introduction of about one or two pages presenting the nature of the problem, its incidence, likely causes, and possible counselling outcomes.
- A half page (brief) summary of the case.

2. Identification of Data

- Name (may be fictitious)
 - Diagnosed Problem
 - Voluntary or Referral (i.e., by whom referred — such as teacher, parent, sibling, etc.)
- ##### 3. Case History
- A paragraph giving age, gender, school attended, class (grade) presently enrolled in, etc.
 - Information about socio-economic status (SES) consisting of information about mother's/father's education and occupation, family income, house type, number of members in the family— brothers, sisters and their birth order, adjustment in the family, etc.
 - Information about physical health, physical characteristics (e.g., height and weight), any disability/illness (in the past and present), etc.
 - Any professional help taken (past and present), giving a brief history of the problem, attitude towards counselling (indicating the motivation to seek help, etc.).
 - Recording signs (i.e., what is observed in terms of facial expressions, mannerisms, etc.) and symptoms (i.e., what the subject reports, for example, fears, worry, tension, sleeplessness, etc.).

4. Concluding Comments

Economics

Note : Do the assignment in your notebook.

Sr. No.		Marks
1	Nominal GNP is the same as, a) GNP at constant prices b) Real GNP c) GNP at current prices d) GNP less Net factor income from abroad	1
2	An example of transfer payment is, a) Free meals in the company canteen b) Employers' contribution to social security c) Retirement pension d) Old age pension	1
3	Microeconomics is different from macroeconomics as, a) Microeconomics deals with economic behaviour b) Microeconomics deals with individual behaviour c) Microeconomics deals with prices only d) Microeconomics deals with the government's decisions	1

4	Central Bank is a/an, a) Apex Bank b) Rural Bank c) Regional bank d) Commercial Bank	1
5	Calculate the value of money multiplier and the total deposit created if the initial amount is ₹. 700 crores and LRR is 10%.	1
6	One of the measures of the money supply is, a) O1 b) N1 c) M1 d) P1	1
7	Money is a medium of, a) Communication b) Barter c) Exchange d) Speculation	1
8	Consumption changes in the same direction as income. It is, a) True b) False c) Can't say d) Insufficient information	1
9	The level of equilibrium income is determined by, a) AD and national income b) AD and investment c) AD and consumption d) AD and AS	1
10	In a 2 sector economy aggregate demand equals, a) Consumption + Private consumption expenditure b) Consumption + Exports c) Consumption + Investments d) Consumption + Government Expenditure	1
11	The difference between value of output and value added is: a) Depreciation b) Intermediate consumption c) Net indirect taxes d) NFIA	1
12	Product method of calculating national income is also known as: a) Income method b) Value added method c) Expenditure method d) Distribution method	1
13	Transfer payments refer to payments, which are made: a) Without any exchange of goods and services b) To workers on transfer from one job to another c) As compensation to employees d) None	1

14	National Income differs from Net National Product at market price by the amount of: a) Current transfers from rest of the world b) Net Indirect Taxes c) National debt interest d) it does not differ	1
15	National Income doesn't include: a) Interest on unproductive national debt b) Income for government expenditure c) The payments by the household to firm for the purchase of goods and services d) Undistributed profit	1
16	In GNP calculation which of the following should be excluded? a) Rental incomes b) Interest payments c) Dividends d) Government transfer payment	1
17	Net national product at factor cost is also known as: a) Net Domestic product b) Gross National product c) National Income d) Personal Income	1
18	Which of the following is not correct ? a) $NNP_{MP} = GNP_{MP} - \text{depreciation}$ b) $NNP_{MP} = NNP_{FC} + \text{net indirect taxes}$ c) $GDP_{MP} = GNP_{MP} + NFIA$ d) $NDP_{FC} = GDP_{FC} - \text{depreciation}$	1
19	The issue of one rupee currency note in India is the liability of the: a) Issue Department of the RBI b) Government of India c) State Bank of India d) Banking Department of the RBI	1
20	Which of the following will not come under narrow money? a) Currency in circulation b) Demand Deposit c) Time Deposit d) None of these	1
21	M_3 is: a) Currency with public + demand deposits of the public b) $M_1 + M_2$ c) $M_1 + \text{Time deposits of the public with bank}$ d) All of these	1

22	Which of the following is not qualitative credit control measure of the RBI ? a) Capital Rationing b) Moral Suasion c) SLR d) Margin requirement	1
23	RBI was Nationalized in : a)1959 b)1947 c) 1945 d)1949	1
24	When the bank rate increases the demand for loans_____ a)Reduces b)Increases marginally c) Remains unchanged d)Increases drastically	1
25	Which of the following is the monetary authority on a country? a)The government of the country b)The Banking system of the country c) The Central Bank of the country d)All of these	1
26	In a two sector economy Aggregate Demand equals. a) Consumption + Private consumption expenditure b) Consumption + Exports c) Consumption + Investment d) Consumption + Government Expenditure	1
27	$C = a + b (Y)$ a) The algebraic function of the level of investment expenditure b) The linear function of the level of consumption expenditure c) The algebraic function of the level of consumption expenditure d) The algebraic function of the level of capital expenditure	1
28	If an economy is to control recession like most of the Euro-Zone nations, which of the following can be appropriate: (1) a) Reducing Repo Rate b) Reducing CRR c) Both (i) and (ii) d) None of (i) and (ii)	1
29	Which of the following agency is responsible for issuing 1 currency note in India? (1) a) Reserve Bank of India. b) Ministry of finance c) Ministry of Commerce d) Niti Aayog	1
30	Flow of Goods & services and factors of production across different sectors in a barter economy is known as: (1) a) Circular flow b) Monetary Flow c) Real flow d) Capital Flow	1
31	Calculate the net value added at the market price of a firm:	3

	<p>Items Amount:</p> <p>Sale 400</p> <p>Change in stock -20</p> <p>Depreciation 30</p> <p>Net indirect taxes 40</p> <p>Purchase of machinery 200</p> <p>Purchase of intermediate product 250</p>	
32	<p>In an economy, $C = 300 + 0.5Y$ and $I = ₹. 600/-$ (where $C =$ consumption, $Y =$ income or investment). Compute the following:</p> <ul style="list-style-type: none"> Consumption expenditure at equilibrium level of income 	3
33	<p>In an economy $C = 200 + 0.5 Y$ is the consumption function where C is the consumption expenditure and Y is the national income. Investment expenditure is 400 crores. Is the economy in equilibrium at an income level 1500 crores? Justify your answer.</p>	3
34	Discuss the significance of 45 degree line in Keynesian Economics.	3
35	<p>State under what conditions in the following statements may be true:</p> <p>a. GNDI is equal to GNP at market prices.</p> <p>b. Domestic Income is greater than National Income</p> <p>c. Value of output is equal to Value Added</p>	3
36	Illustrate with the help of a hypothetical numerical example the process of credit creation.	4
37	Discuss briefly, the circular flow of income in a two sector economy with the help of a suitable diagram.	4
38	“Economists are generally concerned about the rising Marginal Propensity to Save (MPS) in an economy”. Explain why?	4
39	How the economy achieves equilibrium level of income using Savings-Investment (S-I) approach.	4
40	Use in an imaginary economy GDP at Market Price in a particular fiscal year was 3000 crores, National Income was 2,500 crores, Net Factor Income paid by the economy to Rest of the World was 400 crores and the value of Net Indirect Taxes is 100 crores. Estimate the value of consumption of fixed capital for the economy from the data.	4
41	State any two differences between GDP at constant prices and GDP at current Prices.	4
42	What is meant by problem of double counting? How this problem can be avoided?	4
43	“GDP as an index of welfare may understate or overstate welfare.” Explain the statement using examples of a positive and a negative externality	4
44	<p>Explain the following functions of RBI:</p> <p>a) Lender of last resort</p> <p>b) Government’s Bank and Agent</p>	6
45	With a help of a graph derive consumption curve from saving curve. Explain it in brief.	6
46	Explain the concept of “deflationary gap” with the help of a graph. Also explain the fiscal measures to correct it.	6
47	Briefly explain the concept of “inflationary gap” with the help of a graph. Also explain the monetary measures to correct it.	6
48	What is the range of values of investment multiplier? Clarify the relation of investment multiplier with marginal propensity to consume (MPC) and with marginal propensity to save (MPS).	6
49	Explain any four limitations of using GDP as a measure/index of welfare of a country.	6
50	Derive a straight line saving curve using the following consumption function: $C = 20 + 0.6Y$.	6

	Presuming the income levels to be 100, 200 and 300 crores. Also calculate that level of income where consumption is equal to income.	
51	How an initial increase in investment affects the level of final income of the economy? Show its working with a suitable numerical example.	6
52	Differentiate between National Income at Current Prices and National Income at Constant Prices. Which of the two presents a better view of the economic growth of economy and why?	6
53	a) State any two precautions that must be taken into consideration while estimating national income by value added method. b) In an economy, following transactions took place. Calculate value of output and value added by Firm B: i. Firm A sold to firm B goods of 80 crore; to firm C 50 crore; to household 30 crore and goods of value 10 crore remains unsold ii. Firm B sold to firm C goods of 70 crore; to firm D 40 crore; goods of value 30 crore were exported and goods of value 5 crore was sold to government.	6
54	How the following tools can be used for credit control by the central bank in an economy: a) Open Market Operations b) Margin Requirements	6
55	How will 'Reverse Repo Rate' and 'Open Market Operations' control excess money supply in an economy?	6
56	State whether the following statements are true or false. Give valid reasons for your answers. (i) Unplanned inventories accumulate when planned investment is less than planned saving. (ii) Deflationary gap exists when aggregate demand is greater than aggregate supply at full employment level. (iii) Average propensity to save can never be negative.	6
57	Will the following factor income be included in domestic factor income of India? Give reasons for your answer:- (i) Compensation of employees to the resident of Japan working in Indian embassy in Japan. (ii) Payment of fees to a Chartered Accountant by a firm (iii) Rent received by an Indian resident from Russian embassy in India. (iv) Compensation given by insurance company to an injured worker.	6
58	Explain the role of the following in correcting the deficient demand in an economy. • Open market operations • Bank rate	6
59	Explain the role of government in fighting inflationary and deflationary tendencies.	6
60	Giving reason explain how the following should be treated in estimation of national income: (i) Payment of interest by a firm to a bank (ii) Payment of interest by a bank to an individual (iii) Payment of interest by an individual to a bank	6

Objective of the Project:

- Probe deeper into theoretical concepts learnt in class XII.
- Analyse and evaluate real world economic scenarios using theoretical constructs and arguments.

- Demonstrate the learning of economic theory.
- Project should be of 3500-4000 words (excluding graphs and diagrams)

Expected Checklist:

- Introduction of topic/title.
- Identifying the causes, consequences and remedies.
- Various stakeholders and effect on each of them.
- Advantages and disadvantages of situations or issues identified
- Short-term and long-term implications of economic strategies suggested in the course of research.
- Validity, reliability, appropriateness and relevance of data used for research work and for presentation in the project list.
- Presentation and writing that is succinct and coherent in project file
- Citation of the Material referred to, in the file in footnotes, resource section, bibliography etc.

Class XII	
• Micro and Small Scale Industries	• Food Supply Channel in India
• Contemporary Employment situation in India	• Disinvestment policy of the government
• Goods and Services Tax Act and its Impact on GDP	• Health Expenditure (of any state)
• Human Development Index	• Inclusive Growth Strategy
• Self-help group	• Trends in Credit availability in India
• Monetary policy committee and its functions	• Role of RBI in Control of Credit
• Government Budget & its Components	• Trends in budgetary condition of India
• Exchange Rate determination – Methods and Techniques	• Currency War – reasons and repercussions
• Livestock – Backbone of Rural India	• Alternate fuel – types and importance
• Sarva Siksha Abhiyan – Cost Ratio Benefits	• Golden Quadrilateral- Cost ratio benefit
• Minimum Support Prices	• Relation between Stock Price Index and Economic Health of Nation
• Waste Management in India – Need of the hour	• Minimum Wage Rate – approach and Application
• Digital India- Step towards the future	• Rain Water Harvesting – a solution to water crises
• Vertical Farming – an alternate way	• Silk Route- Revival of the past
• Make in India – The way ahead	• Bumper Production- Boon or Bane for the farmer
• Rise of Concrete Jungle- Trend Analysis	• Organic Farming – Back to the Nature
• Any other newspaper article and its evaluation on basis of economic principles	• Any other topic