

PRE-ISC EXAMINATION DECEMBER - 2019
CLASS: 12, SUBJECT: PHYSICS, PAPER – II:PRACTICAL
FM = 30, R/T = 15 MIN, W/T = 3 HOURS

Instructions: Answer all questions

1. Using a **metre bridge** determine the resistance of the manganin wire mounted on the wooden board, measure its exact length and radius and hence calculate the **specific resistance** of manganin. [9]
2. Determine the focal length of the given convex lens by **displacement** method. [6]
3. Show the **Project File** to the Visiting Examiner. [10]
4. Show the **Practical Copy** to the Visiting Examiner. [5]

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MOCK EXAMINATION -2019
CLASS XII
CHEMISTRY (PAPER- 2)
(PRACTICAL)
(THREE HOURS)

(Candidates are allowed additional 15 minutes for only reading the paper. They must not start writing during this time)

All answer must be written in the answer booklet provided separately.

Attempt all questions

Question 1

You are provided with two solutions as follows: [7]

*C-10 is a solution prepared by dissolving 1.85 gms of potassium manganate (VII) KMnO_4 per litre.

*C-11 is a solution prepared by dissolving 22 gms of hydrated ammonium iron (II) sulphate crystals, $(\text{NH}_4)_2\text{SO}_4 \cdot \text{FeSO}_4 \cdot x\text{H}_2\text{O}$ per litre.

PROCEDURE:-

Rinse and fill the burette with the given solution C-10 of potassium manganate (VII). Pipette out 20 ml or 25 ml of the solution C-11 of ammonium iron (II) sulphate solution into a clean conical flask. To this, add 20 ml of C-12 solution of dilute H_2SO_4 specially provided for titration.

Titrate the solution by running solution C-10 from the burette till one drop of this solution gives a permanent light colour to the solution C-11 in the conical flask. Ensure that the pink colour obtained does not disappear on shaking the contents of the conical flask.

Repeat the above procedure of the titration to get at least two concordant readings.

Tabulate your readings.

State:

(a) The capacity of the pipette used.

(b) The titre value you intend to use in your calculations.

Show the titre value to the visiting examiner.

The equations for the above reactions are as follows:



Relative atomic masses:

K=39, Fe=56, S=32, N=14, H=1, Mn=55, O=16

Calculate the following:

(i) The molarity of potassium manganate (VII) solution C-10.

(ii) The molarity of the hydrated ammonium iron (II) sulphate solution C-11.

(iii) The molecular mass of hydrated ammonium iron (II) sulphate, deduced from the experimental data.

(iv) The numerical value of x, i.e. the number of molecule of water of crystallization in $(\text{NH}_4)_2\text{SO}_4 \cdot \text{FeSO}_4 \cdot x\text{H}_2\text{O}$.

Question 2

You are provided with two compounds C-13 and C-14.

a) Substance C-13

(i) Take about 2 ml of C-13 in a test tube and add 2 to 3 drops of alcoholic alpha naphthol solution. Shake and add about 1 ml of conc. H_2SO_4 by the side of the test tube carefully.

(ii) Take 2 ml of C-13 in a test tube and add 1 ml of Tollen's reagent. Warm the contents in a water bath for five minutes.

b) Substance C-14

(i) Take 2 ml of substance C-14 in a test tube and add a few drops of dilute H_2SO_4 . To this, add 1 ml of $\text{K}_2\text{Cr}_2\text{O}_7$ solution. Shake well and warm in water bath.

(ii) Take 2 ml of C-14 in a test tube and add 1 ml of conc. HCl and a few drops of neutral FeCl_3 solution. Shake and dilute with water.

Show the results as required to the examiner.

Question 3.

Analyse qualitatively the substance C-15 which contains one anion and one cation. Identify these ions. [4]

(a) While testing for anion you must mention:

(i) How the solution/soda extract was prepared.

(ii) How the gases were identified.

(iii) The confirmatory test for anion.

(b) While testing for the cation you must mention:

(i) How the original solution for group analysis was prepared.

(ii) The formal group analysis with pertinent group reagents.

(iii) The confirmatory test for each cation.

Show the results as required to the examiner..

Note: Use of qualitative analysis booklet/table is not allowed.

CLASS XII PRE -ISC EXAMINATION - 2019
BIOLOGY (Practical) Paper 2

R.TIME: 15 MINS. / W.TIME : 3 HRS / F.M : 30

Answer **all** questions.

All working including rough work, should be done on the same sheet as the rest of the answer.

The intended marks for questions or parts of questions are given in brackets [].

Question 1:

[5]

- (a) Observe the given flower specimen D41 carefully. Describe its floral characters in semi-technical terms. (No details of individual whorls are required.)
- (b) Cut a longitudinal section of one of the flowers with a sharp razor blade. **Show it to the Examiner.** Draw a neat labelled diagram of one of the cut surfaces.
- (c) (i) Observe the androecium carefully. Separate a stamen and make a labelled diagram of the same.
- (ii) Comment on the following features:
1. Relation of stamens to petals.
 2. Relation of stamens to each other.
 3. Nature of anther.
 4. Number of anthers.
- (d) Observe the gynoecium of specimen D41 carefully and comment on the following:
- (i) Nature of stigma.
 - (ii) Type of placentation.
 - (iii) Position of ovary in relation to the other whorls.
- (e) Take a fresh specimen of D41. Beginning from outside, remove each whorl one by one, with the help of forceps, till you reach the gynoecium. Cut a transverse section of the ovary. Make a labelled diagram of the cross-section of the ovary.
- (f) Write the floral formula of specimen D41.
- (g) Draw the floral diagram of the specimen D41.
- (h) Name the family to which this specimen belongs.
- (i) Write any two specific characteristics of the family mentioned in (h) above.
- (j) Give the botanical name of one economically important plant of the family mentioned in (h) above, other than D41.

Question 2:

[3]

- (a) You are provided with 5% solution of an enzyme D-42, 1% solution of starch, 1% NaCl solution and buffer pH 6.8.
- (b) Set up six test tubes in a test tube stand and label each with a glass marker or sticker as A₁, A₂, B₁, B₂, C₁ and C₂.
- (c) Take three (250ml) beakers and label these as A, B and C. Pour 150 ml water in each of the three beakers and set the temperature of water as: beaker A at 37°C, beaker B at 80°C and beaker C at 5°C.
- (d) In each of the test tubes mentioned in (b) above, put:
- 2ml of starch solution (1%)
 - 1ml of NaCl (1%)
 - 1ml of buffer pH 6.8
- (e) Place the test tubes in the beaker as follows:
Test tube A₁ in beaker A (37°C), test tube B₁ in beaker B (80°C) and test tube C₁ in beaker C (5°C).
- (f) In test tubes A₁, B₁ and C₁ add 2ml of the enzyme solution D-42 kept at room temperature.
- (g) Boil 10ml of enzyme D-42 provided. Bring it to room temperature and then add 2ml of this pre heated enzyme in each of the test tubes A₂, B₂ and C₂.
- Now, place the test tubes in the beaker as follows:

- Test tube A₂ in beaker A, test tube B₂ in beaker B and test tube C₂ in beaker C.
- (h) Leave all the test tubes for 20 minutes in their respective beakers. Stir the contents at regular intervals. Add two drops of 1% iodine solution in each of the test tubes marked A₁, A₂, B₁, B₂, C₁ and C₂.
- (i) Record your observations in a tabular form as shown below. **Show your observations to the Examiner.**

Test tube No.	Temperature	Observation / Colour change
A ₁	37°C	-
A ₂	37°C	-
B ₁	80°C	-
B ₂	80°C	-
C ₁	5°C	-
C ₂	5°C	-

- (j) What is the purpose of preheating the enzyme D-42?
- (k) What is the end product of digestion by enzyme D-42?
- (l) What conclusions can be drawn from the results of this experiment?

Question 3: **[2]**

- (a) With a sharp razor blade, cut several transverse sections of the specimen D43 provided. Put all the sections in a watch glass filled with water. Select a good section and mount the section in glycerine. **Show your slide to the Examiner** under the microscope.
- (b) Draw a neat labelled diagram of the mount as observed under the microscope.
- (c) (i) Identify the specimen.
(ii) Give two reasons to support of your answer in (c) (i) above.

Question 4: **[5]**

- (i) Identify the given specimen A to E. Give two reasons to support your answer in each case.
- (ii) Draw a neat labelled diagram of each specimen.
You are not allowed to spend more than three minutes for each spot.

Question 5: **[15]**

Show the following to the Examiner for assessment:

- (a) Project **[10]**
- (b) Biology Practical File. **[5]**

MOCK EXAMINATION 2019
ENGLISH PAPER-I

Class-XII

F.M. 100
Time 3 Hrs.

Question 1. **[25]**

Write a composition (in approximately 400 __ 450 words) on any one of the following subjects.

(You are reminded that you will be rewarded for orderly and coherent presentation of material, use of appropriate style and general accuracy of spelling, punctuation and grammar.):

- a) "We humans are a peaceful species at heart." Explore this statement, giving your views.
- b) Rains, which bring the much needed relief from the sweltering heat, can also cause havoc in our lives. Describe how two days of incessant rain caused unlimited problems for the people in your town/ city.

- c) Charity.
- d) "Children today have become so engrossed in the 'virtual' world that they have lost touch with reality."
Express your views on the topic.
- e) 'First impressions are not always the best.' Write for or against this proposition.
- f) Write an original short story which has for its beginning the following:
At first glance he seemed a friendly sort of person, yet there was something.

Question 2.

- a. You have been approached by an advertising agency to write a travel brochure (in approximately 300 words) for a place that is recently developing as a tourist spot. [20]
Name and location of the place – geographical attributes – scenic beauty – opportunity for other tourist activities like sightseeing, trekking/rock climbing/sea bathing/ swimming/ scuba diving / places of tourist interest in and around the place – methods of reaching the place – names of hotels, tourist lodges, holiday homes available – range of rates – quality of food and accommodation – other facilities – suggestions to tourists.
- b. The world witnessed the hottest year on record in 2018 .This has been attributed to global warming and climate change. Write a proposal, suggesting ways by which this phenomena can be checked to save our planet from an impending catastrophe. [10]

Question 3.

Answer sections (a), (b) and (c) :

- a) In each of the following items, sentence A is complete, but sentence B is not.. Complete sentence B, making it similar in meaning as possible to sentence A. Write down sentence B complete in each case:
[10]

1. A. Prakash received his friend's call and immediately went to meet him at the airport.
B. As soon as _____
2. A. Mala asked Mrs Mehra whether she had ever met Pari.
B. Mala said, _____
3. A. Nobody expected that John would win the lottery.
B. It was _____
4. A. Sheena's father was greatly distressed by the news of her transfer to Indore.
B. The news _____
5. A. Physical education is very important, it must not be neglected.
B. Use 'too' in your sentence _____
6. A. Mr. Mittal is the richest landowner in north India.
B. No _____
7. A. Can anyone doubt that what Govind said is the truth?
B. The truth _____
8. A. The child denied that he had broken the expensive antique vase.
B. The child _____
9. A. Mallika has never been rude to anyone.
B. Never _____
10. A. Hera took out her pen to sign the cheque.
(Rewrite the sentence using 'that')
B. _____

- b) Fill in each blank with a suitable word: [5]

- 1) Navin is very untidy and has clothes scattered all _____ the house.
- 2) Dona's colleagues condoled _____ her on her bereavement.
- 3) Mani hopes _____ the fulfillment of his wishes.
- 4) Mrs Bharadwaj prepared herself _____ a life of poverty and misery.
- 5) The phoenix is a mythical creature that recreates itself _____ its own ashes.
- 6) The warrior drew a sword _____ of the scabbard.
- 7) The rag picker rummaged _____ garbage for scraps.
- 8) Wallace is very upset _____ the recent fall in the shares.
- 9) Sadie suddenly thought _____ a splendid idea.
- 10) Amazing discoveries have been made _____ explorers.

- c) Fill in each blank in the passage given below with the appropriate form of the verb given in brackets. Do not rewrite the passage but write down the verbs in the correct order. [5]

I found a flat piece of land on the side of a _____ (1) (rise) hill. It was about a hundred yards wide and two hundred yards long. On the side of this rock, there was a cave which _____)2) (can) be used as a storeroom. This _____ (3) (be) the right place for my house since nothing could come down upon me from the top or come up from below without _____ (4) (see). I could have a clear view of the sea from here.

Before I _____ (5) (set) up my tent, I decided _____ (6) (build) a strong fence round it. It was not an easy thing to do for I had to do everything by myself. I cut strong posts with my axe, _____ (7) (stand) firm and strong. Then I sharpened the top. I put a second line of posts behind the first and filled the empty places with stone and earth. This _____ (8) (take) me a great deal of time and effort, especially to cut the posts in the woods, drag them to the place, and _____ (9) (drive) them into the earth. Instead of a gate, I made a short ladder to go over the top of the fence. When I was in, I _____ (10) (lift) it over after me.

Question 4.

Read carefully the passage given below and answer the questions that follow:

My first term at Lowood seemed an age. I had great difficulty in getting used to all the new rules and lessons, but my continual fear of failure worried me far more than the daily hardships.

From January to March, the deep snow kept us within the school bounds, except when we were taken to church. But every day we had to spend an hour in the open air, and our clothing was insufficient to protect us from severe cold. The snow got into our shoes and melted there. Our feet and hands were covered with chilblains.

The lack of good food was distressing, and besides the big girls would coax or menace the little ones out of their share. Many a time did I see my precious bit of bread shared between two seniors, and half my mug of coffee drunk by a third, leaving me a to swallow what was left, with secret tears.

Sundays were dreary days in winter. We had to walk two miles to Brocklebridge church, where our patron was the clergyman. We set out feeling cold, arrived at the church colder after walking through the snow and became almost paralysed with cold during the long service.

It was too far to return at mid day for a meal, so we were given a little cold meat and bread while we waited for the after noon service.

Late in the afternoon, we would walk back to school over the bleak and hilly road. I can remember Miss Temple, with her cloak fluttering in the cold wind, walking raidly along, trying to encourage us to keep up our spirits. The other teachers were too depressed themselves to cheer others.

How we longed for the light and heat of a blazing fire when we got back! But this was denied to the little ones, because each fire was immediately surrounded by double rows of the bigger girls.

One afternoon I was puzzling over a long division sum, when I caught sight of a passing figure outside the window. It was Mr Brocklehurst. Before long he was striding into the school-room beside Miss Temple, the same tall figure that had towered over me at Gateshead.

I had my own reasons for dismay at this visit. I had been dreading any possible revelation about my past life, in case he should brand me as a bad child for ever. But I was somewhat relieved when I caught most of what he was saying to Miss Temple.

'When I was here last, Miss Temple,' Mr Brocklehurst was saying, 'I went into the back garden and examined the clothes drying on the line. Many of the black stockings were in a bad state of repair. I'm sure they had not been properly repaired.' He paused.

"They shall be attended to, sir,' replied Miss Temple.

"There is another thing that surprised me,' Mr Brocklehurst continued. 'When settling the housekeeper's account, I find that an extra meal of bread and cheese has twice been served to the girls last fortnight. Who gave permission for this, and by what authority?

'I must take the responsibility for this, Sir,' replied Miss Temple. 'The porridge was so badly burnt that the girls could not possibly eat it.'

'Madam, listen to me. You know that my plan in bringing up these children is to make them hardy, patient and self-denying – not to encourage luxury and self-indulgence. I want to teach them strength through hardship. Actually, the spoiling of a meal should be an occasion for the spiritual instruction of the pupils!'

Mr Brocklehurst paused again, perhaps overcome by his feelings.

Suddenly he gave a start. He said, 'Miss Temple, who is that girl with curled hair? Red hair, madam, curled all over?' His hand shook as he pointed out the girl in question.

'It is Julia Severn,' said Miss Temple, very quietly.

'Julia Severn, madam? And why, in this house of charity, is she allowed to wear her hair in a mass of curls?'

'Julia's hair curls naturally,' replied Miss Temple.

'Naturally? But we are not here to encourage nature! I prefer hair to be modest and plain. That hair must be cut off entirely! I will send a barber tomorrow. Tell all the senior girls to stand up and face the wall.'

Miss Temple put her handkerchief to her lips, as if to hide them. A voice of doom was heard. 'All those topknots and plaits must come off.'

Miss Temple turned to protest.

'Madam,' continued Mr Brocklehurst, 'my duty is to teach these girls to clothe themselves in soberness and simplicity. Those plaits are interwoven with vanity itself! Think of the waste of time —'

Here there was an interruption. Three ladies had entered the school-room. They were splendidly dressed in velvet, silk and furs. The two younger ones were girls of sixteen or seventeen, and their loose fair hair rippled from under their smart grey hats, elaborately curled. The elder lady wore velvet, trimmed with ermine, and her hair was also curled across her brow. They were Mrs. Brocklehurst and her two daughters.

(a) (i) Given below are four words or phrases. Find the words which have a similar meaning in the passage; [4]

1. persuade someone by encouraging or praising insincerely
2. dull or sad; miserable
3. false pride; self-love
4. an expensive white fur

(ii) For each of the words given below write a sentence of at least 10 words, using the same word unchanged in form, but with a different meaning from that it carries in the passage: [4]

1. term
2. spirits
3. brand
4. pupils

(b) Answer the following questions as briefly as possible in your own words:

1. Why was the narrator dismayed when she saw Mr Brocklehurst striding into the school room? [2]
2. Why did Miss Temple give the girls an extra meal of bread and cheese? [2]

3. Who was Julia Severn? How did she catch Mr Brocklehurst's attention? What order did he give regarding Julia Severn? [3]

4. 'Here there was an interruption.' What was this 'interruption'? Describe in detail. [3]

(c) In about 100 words of your own describe the daily hardships that the narrator had to face at Lowood. [7]
Write your points in the form of a connected passage.

Mock examination,2020

GEOGRAPHY

CLASS 12

F.M.=70

TIME=3 hours

Part I(COMPULSARY) [30]

Answer all questions.

Q1. Answer the following: (10x2=20)

- i. "The Indian Ocean is truly Indian Ocean"- illustrate.
- ii. What are 'duns'? Give two examples.
- iii. What is meant by antecedent drainage? Name any two rivers having antecedent drainage in India.
- iv. What is virgin vegetation? Where is it found in India?
- v. Name one Indian oil refinery under the public sector and one under the private sector.
- vi. What is the difference between coach and wagon?
- vii. state any two factors that determine the location of the readymade garment industry in India.
- viii. What are southern oscillations?
- ix. What are outgrowths (O.G.s) of cities and towns?
- x. What is the significance of the coal deposits of Chattisgarh? Name one country which imports iron ore deposits from Chattisgarh.

Q2. On the outline map of India provided: (10)

- a. Mark and name the meridian on the basis of which the IST is determined.
- b. Mark and name the Vindhya.

- c. Mark and name the only perennial river in peninsular India.
- d. Shade and label an area prone to drought.
- e. Mark and name the state which has the lowest sex ratio.
- f. Mark with a dot and name the centre for Maruti automobile industry.
- g. Shade and label the Meghalaya plateau.
- h. Draw the longest side of the Golden Quadrilateral. Mark the two terminal towns and mention its length.
- i. Mark and name the first oil refinery of India.
- j. Shade and name an area having deciduous forest.

PART II

Answer any four questions. (4x10=40)

- Q3. a. Mention three differences between the two island groups of India. (3)
 b. With reference to the Deccan plateau in India, answer the following:
 i. What type of rock is it made of?
 ii. State any two characteristic features of this relief division? (1+2=3)
 c. With reference to Forest Conservation Movement, explain the Chipko Movement. Give the reasons for its success. (4)
- Q4. a. Define literacy rate. How is it related to the growth rate of population? (2+2=4)
 b. Discuss one positive and one negative consequence of migration. (2)
 c. Define statutory towns and Census towns. (1+3=4)
- Q5. a.i. What are the two reasons for arable land degradation in India? (2)
 ii. What is meant by net sown area? State the significance of net sown area in India. (3)
 b. i. Mention three ways in which modern means of irrigation are more advantageous than the ancient methods of irrigation. (3)
 ii. Name any two alternative methods of irrigation. (1)
 c. What is waterlogging? (1)
- Q6. a. What are the two climatic conditions required for the cultivation of groundnut in India? (2)
 b. Give three reasons for the high jute production in India and Bangladesh. (3)
 c. Diagrammatically illustrate two reasons that have helped Japan become the leading nation in fishing. (2)
 d. i. Name the largest coalfield of Chattisgarh. State its importance. (1+1=2)
 ii. Mention the two environmental concerns with regard to the use of conventional energy resources. (1)
- Q7. a. i. Define Density of roads.
 ii. Which state in India has the highest density of roads and why? (1+2=3)
 b. Give an account of the Chennai port with reference to its hinterland, its chief imports and exports and its problems. (4)
 c. State two ways in which cellular phones are an important means of communication. (1)
 d. Mention two ways in which National Highways are different from Golden Quadrilaterals. (2)
- Q8. a. What are industrial clusters? (2)
 b. Where is the Vishvesvaraya Iron and steel limited located? How has this steel plant overcome the disadvantage of not being located near any coal mining region? (3)
 c. Mention four reasons that led to the negative growth rate in foreign tourist arrivals from the year 2001. (4)
 d. Name the following: (1)
 i. A historic place in Rajasthan.

- ii. A place where an annual fair is held, that attracts tourists from all over.
- Q9. a. With reference to Haldia port, answer the following:
- Name an important industry located here.
 - Name two items of import and two of export from this port. (2)
 - What is meant by a micro region? Explain with an example. (3)
 - Distinguish between multi level planning and single level planning. (2)
 - Explain the concept of development from a geographer's viewpoint. (3)
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Class XII Mock Examination—2020

HISTORY

Three Hours/80 marks

Candidates are allowed additional 15 minutes for only reading the paper. They must NOT start writing during this time

Answer Question 1 (Compulsory) from Part I and five questions from Part II, choosing two questions from Section A, two questions from Section B and one question from either Section A or Section B.

PART I

Answer all questions

Question 1 [20]

- State one reason for the arrival of the Cripps Mission.
- State one cause of dispute between India and Pakistan arising from the Partition in 1947.
- What is the historical importance of 25th June 1975 in the context of Indian democracy?
- Name any two founding members of the Non-Aligned Movement.
- Name the first General Secretary of the Communist party of India (Marxist-Leninist).
- Name the movement started by Jayaprakash Narayan.
- Which movement aimed to create a separate Sikh country?
- Give the full form of AAGSP.
- Who became the President of the newly formed Bangladesh in 1972?
- Which state was formed in 1953 on the basis of linguistic identity?
- Mention any one objective of Hitler's foreign policy.
- How did the Second World War come to an end in 1945?
- Which campaign did Mao call off in a hurry?
- Give one example of racial discrimination in the USA after the Second World War.
- Name the nationalist leader under whom Kenya got independence.
- What is the meaning of Apartheid?
- How did the East German authorities try to stop refugees to the West in 1961?
- Who became the first Chancellor of United Germany after the Second World War?
- Name the American President who was instrumental in the signing of the Camp David Accord.
- State one term of the Oslo Peace Accords (1993).

PART II (60 Marks)

Answer five questions in all, choosing two questions from Section A, two questions from Section B and one question from either Section A or Section B.

SECTION A

Question 2

- a. What led to a change in attitude of the British towards India after the Second World War? [6]
- b. What were the main provisions of the Cabinet Mission Plan? [6]

Question 3

Discuss the origin of the Kashmir problem after independence of India. [12]

Question 4

- a. Discuss the role of the Syndicate in Indira Gandhi's appointment as the prime minister and her initial relationship with it. [6]
- b. Discuss the circumstances which led to the split of Congress in 1969. [6]

Question 5

- a. What were the circumstances that led to the formation of the Janata Government in 1977? [6]
- b. Discuss Nagaland's demand for autonomy and its resolution. [6]

Question 6

- a. Discuss the circumstances that led to the outbreak of the Indo-Pak War of 1971. [6]
- b. What were the consequences of the war? [6]

SECTION B

Question 7

- a) What were the causes of Communist victory in China? [6]
- b) Give an account of the Cultural Revolution and its impact on China. [6]

Question 8

- a. Discuss the progress of Mussolini's foreign policy which made him an ally of Hitler in the Second World War. [6]
- b. Give an account of the battle of Stalingrad and its impact. [6]

Question 9

- a. Briefly evaluate Nelson Mandela's role in the Anti -Apartheid Movement. [6]
- b. Give an account of the Second Wave Feminist Movement in the USA and its impact. [6]

Question 10

- a. Give an account of the Communist takeover of Czechoslovakia (1968) [6]
- b. Why was there a thaw in the Cold War in the 1950s? Give two reasons for relaxation of tension (détente) in the 1970s? [6]

Question 11

Discuss the causes, events and results of the Suez Crisis (1956). [12]

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Mock Examination – 2019

Subject- Accounts

F.M.-80

Time- 3 hrs

Part – I of Section A is Compulsory.

Answer any four Questions from Part II of Section A and any two Questions from Section B.

The intended marks for each Questions are given in []. All calculations should be shown clearly.

Section – A

Part- I [12 Marks]

(Answer all Questions)

Question 1 (6X2)

- (i) What do you mean by issue of Shares for Consideration other than Cash?
- (ii) Name the main headings into which the ' Equity and Liabilities' section of a Company's Balance Sheet is Organized and presented.
- (iii) What is Hidden Goodwill?
- (iv) State the rules for a creation of Debenture Redemption Reserve in relation to Companies, (other than Financial Institutions and NBFC).
- (v) Ram a partner agreed to do the work of dissolution for a commission of Rs 4500. He also agreed to bear the dissolution expenses. Actual dissolution expenses Rs 3900 were paid from the firm's bank account. You are required to pass necessary Journal Entries to record the above transaction.
- (vi) State the methods of calculating profit in case of death of a Partner.

Part- II [48 Marks]

(Answer any four Questions)

Question 2 (8+4)

- (a) The following is the Balance Sheet of Fisher & Co as at 31st December 2016.

Balance Sheet as at 31.12.2016

Liabilities	Rs	Assets	Rs
Capital-		Machinery	5000
Masheer	4100	Furniture	2800
Salmon	4100	Fixture	2100
Carp	4500	Cash	1500
General Reserve	1500	Stock	950
Creditors	2350	Debtors	4500
		Less – Provision for Bad Debts 300	4200
Total	16550	Total	16550

C died on 3rd January, 2017 and the following agreement was to be put into effect-

- (i) Assets were to be revalued: Machinery to Rs 5850; Furniture to Rs 2300; Stock to Rs 750.
- (ii) Goodwill was valued at Rs 3000 and Carp was to be credited with his share, without using a Goodwill account.
- (iii) Rs 1000 was to be paid away to the executors of the dead partner on 5th January, 2017.

Show - The Journal entry for Goodwill Adjustment

Revaluation and Capital account of the Partners.

Which account would be debited and which account would be credited if the Provision for Bad Debts in the Balance Sheet was to be found Unnecessary to maintain at the death of Carp.

- (b) Three Chartered Accountants A, B, C enter into Partnership subject to the following terms:-

- (i) Profit sharing ratio between A, B, and C will be 3:2:1.
- (ii) Gross fees earned by A, B, and C shall be equal to their average gross fees of the preceding 3 years when they were carrying on the profession individually.
- (iii) C's share shall not be less than Rs 30000 p.a.

Other Information—

The Net Profit for the first Year is Rs 150000

Average Gross fees of the preceding 3 years: A- Rs 120000; B- Rs 50000; C- Rs 30000

Actual gross fees earned during the year A- Rs 126000; B- Rs 32000; C- Rs 30000.

Prepare the Profit and Loss Appropriation account.

Question 3 (12)

Ram, Rahim and Anthony were in partnership sharing P/L in the ratio $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{6}$. They decided to dissolve the Partnership firm on 31.3.17, when the Balance Sheet of the firm appeared as under:

Liabilities	Amount	Assets	Rs
-------------	--------	--------	----

Creditors	567000	Goodwill	456300
Bank Overdraft	606450	Plant & Machinery	607500
General Reserve	265500	Furniture	64650
Loan from Mrs Ram	150000	Stock	236700
Capital-		Debtors	534000
Ram	420000	Investment	265500
Rahim	225000	Commission Receivable	140550
Anthony	120000	Cash in Hand	48750
Total	2353950	Total	2353950

- (i) Investment was sold for Rs 232500
(ii) Ram took over Goodwill and Plant & Machinery for Rs 900000
(iii) Ram also agreed to discharge bank Overdraft and Loan from Mrs Ram.
(iv) Furniture and Stock were divided equally between Ram and Rahim at an agreed valuation of Rs 360000.
(v) Debtors were assigned to firms creditors in full satisfaction of their claims.
(vi) Commission receivable was received in time.
(vii) A bill discounted was returned dishonored and proved valueless Rs 30750 (including Rs 500 noting charges).
(viii) Ram paid the dissolution expenses Rs 18000
(ix) Anthony agreed to receive Rs 150000 in full satisfaction of his rights, title and interest in the firm.
Prepare (a) Realisation Account (b) Partners Capital Account (c) Cash Account (d) Bank Account.

Question 4 (4+8)

- (a) Robin Ltd issued 50000, 10% Debentures of Rs 100 each on 1.4.12, redeemable at a premium of 10% on 31.3.17. The company decided to create required Debenture Redemption Reserve on 31.3.16. The Company invested the Funds as required by Law in a Fixed Deposit with Syndicate Bank on 1.4.16 earning interest @8% p.a. Tax was deducted at source by bank on interest @ 10%.

Pass Journal entry for

- (i) Issue of Debentures
(ii) Redemption of Debentures (including creation of DRR and investment in Fixed Deposit).
(b) The trainee accountant of John Smith & Co.Ltd. who has gained a little knowledge of accounts, has drafted the following Balance Sheet.

Balance Sheet
for the year ended 31st March , 2017

Particulars	Rs	Particulars	Rs
Land & Building	109500	Capital (18000 equity shares of Rs 10 each fully called up)	180000
Fixed Deposit Accepted—payable in 2020	15000	General Reserve	40000
Furniture	30000	Preliminary Expenses	12000
Goodwill	10000	10% Debentures	35000
Stock	24000	Provision for Taxation	22000
Creditors	9000	Discount on Issue of Debentures	10000
Machinery	25000	Profit & Loss A/c (Cr)	8000
Cash	38000	Investments in Zee Ltd	15000
Bills Payable	7000	Bills Receivable	7000
Bank	72000	Proposed Dividends	14000
Capital Reserve	12000	Debtors	9000
Calls- in – arrears@ Rs 2 per share	2000	Unclaimed Dividends	11000
Securities Premium Reserve	10000	Authorised Capital (20000 equity shares of Rs 10 each)	-----

		Share Forfeiture	500
	363500		363500

You are required to re-draft the above Balance Sheet as per Schedule III, part I of the Companies Act, 2013.

Question 5 (4 + 8)

- (a) On 1.1.2016, HP Ltd had 10000, 12% Debentures of Rs 100 each. As per the provision of the deed, the Directors acquired in the Open Market the following Debentures for immediate cancellation: June 30, 2000 Debentures @ Rs 98; December 31, 4000 debentures @Rs 96. Debenture interest is payable half- yearly, on 30th June and 31st December.

Pass necessary Journal Entries relating to Redemption of Debentures . (Ignore Tax and interest).

- (b) The following is the Balance Sheet of A and B as at March 31st, 2017. C is admitted as a partner on that date when the position of A and B was as under:

Liabilities	Rs	Assets	Rs
A's Capital	10000	Debtors	11000
B's Capital	8000	Land & Building	8000
Creditors	12000	Plant & Machinery	10000
General Reserve	16000	Stock of Goods	12000
Workmen's Compensation Fund	4000	Cash & Bank Balance	9000
Total	50000	Total	50000

A & B shared in the proportion of 3:2. The following terms of admission are agreed upon:

- Revaluation of Assets: Land & Building Rs 18000 and Stock of Goods Rs 16000
- The Liability of Workmen's Compensation Fund is determined at Rs 2000
- C brought in as his share of Goodwill Rs 10000 in Cash.
- C was to bring further cash as would make his capital equal to 20% of the combined capitals of partners A and B after above revaluation and adjustments are carried out.
- The future Profit Sharing Proportion are: A – 2/5th; B – 2/5th; C- 1/5th. Prepare the new Balance Sheet of the Firm and the capital accounts of the Partners.

Question 6 (12)

A, B, and C are in Partnership as accountants carrying on practices in Calcutta and Delhi and sharing profits in the ratio 7:6:5. Interest @ 5% p.a. is allowed on capital accounts. They decided to dissolve the firm. The terms of dissolution were-

- A to retire from business, his share of Goodwill being valued at Rs 3300 to be paid by B and C in their profit-sharing ratio.
- B to carry on business in Calcutta, taking over at book values Furniture and Debtors in Calcutta, and all Liabilities, he also has to pay Rs 600 for the lease of Calcutta office which he kept on.
- C to take over Furniture and Debtors in Delhi.
- B and C each to be credited with 2% of the amount of the book debts taken over by them respectively by way of an allowance to cover the cost of collection.
- Each partner to take over a third of the cash balance and to pay his own costs in connection with the dissolution.

The following Trail Balance was extracted from the firm's books on 30.6.17, on which date the partnership was dissolved by agreement.

Trail Balance

Particulars	Amount(Rs)	Particulars	Amount (Rs)
Drawings:A-	1573	Capital as on 1.7.16	
B-	1292	A	4000

C-	816	B	4000
		C	3000
Goodwill	2400	Profit and Loss Account before charging interest for the year ended 30.6.17	5716
Cash	318	Creditors	78
Debtors: Calcutta-	6750		
Debtors Delhi-	3150		
Furniture: Calcutta-			
Furniture; Delhi-	320		
	175		
Total	16794	Total	16794

You are required to close the books of the firm, assuming that B and C each settled his liability by paying cheque to A on 30.9.17. Interest after 30.6.17 to be ignored.

Question 7 (6+6)

(a) Mandal Ltd invited applications for 100000 shares of Rs 10 each at an issue price of Rs 12, payable as Rs 5 (including premium) on application, Rs 4 on allotment, and the balance in first and final call. Applications for 120000 shares were received. The board of directors allotted (i) in full to applicants for 70000 shares and (ii) the balance of the shares pro-rata to the remaining applicants. The board also utilized any excess application money towards the amount due on allotment.

S, to whom 2100 shares were allotted on a pro-rata basis failed to pay the amounts due from him in respect of allotment and call. These shares were forfeited and re-issued at Rs 11 each.

Prepare the following in the books of Mandal Ltd

- (i) Share Application account
- (ii) Share Capital account
- (iii) Share Allotment Account
- (iv) Share Forfeited account
- (v) Securities Premium Reserve account
- (vi) Share Call account
- (vii) Cash Book

(b) A, B, and C are equal partners. C retires on 31.3.17. the Balance Sheet as on 31.12.16 as follows

Liabilities	Rs	Assets	Rs
Creditors	12900	Cash in hand	1000
Contingency Reserve	4000	Cash at bank	4000
Investment Fluctuation Fund	1200	Debtors- 10000	9200
		Less – Provision for Bad Debts 800	
Partners Capitals;		Stock	10000
A	30000	Investments (cost)	5000
B	20000	Land & Building	40000
C	20000	Goodwill	18900

Total	88100	Total	88100
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In order to arrive at the balance due to C, it was agreed that

- (i) Land & Building valued at Rs 50000
 - (ii) Investment Fluctuation Fund be brought to Rs 500
 - (iii) Debtors are all good
 - (iv) Stock taken at Rs 9400
 - (v) Goodwill be valued at one year's purchase of the average profits of the past five years
 - (vi) C's share of profit to the date of retirement be calculated on the basis of average profit of the preceding three years.
- Profits of the preceding five years were- 2012- Rs 11500; 2013- Rs 14000; 2014- Rs 9000; 2015- Rs 8000; 2016- Rs 10000
Pass the Journal Entries.

Question 8 (4+8)

- (a) Under what heads and sub-heads the following items will appear in the Balance Sheet of a Company as per Schedule III part I of the Companies Act, 2013
 - (i) Stores and Spares
 - (ii) Proposed Dividend
 - (iii) Computer Software
- (b) Weak, Able and Lazy are in partnership sharing P/L in the ratio 2:1:1. It is agreed that interest on capital will be allowed @ 5% p.a. and interest on Drawings @ 4% p.a. No interest will be charged or allowed on current accounts

Particulars	Weak (Rs)	Able(Rs)	Lazy (Rs)
Capitals (1.1.2016)	75000	40000	30000
Current Accounts (1.1.2016)	10000	5000	5000 (Dr)
Drawings	15000	10000	10000
Interest on Drawings (2016)	500	190	350

The draft accounts for 2016 showed a Net Profit of Rs 60000 before taking into account interest on capital and Drawings and subject to the following rectification of errors:

- (a) Life Insurance Premium of Weak Rs 750 paid by the firm on 31.12.2016 has been charged to Miscellaneous Expenditure.
 - (b) Repairs of Machinery Rs 10000 has been debited to Plant account and depreciation charged @ 20%.
 - (c) Travelling Expenses of Able Rs 3000 for a pleasure trip to U.K. paid by the firm on 30.6.2016 has been debited to Travelling Expenses account.
- Prepare P/L Appropriation account for the year ended 31.12.2016 and the partners current account for the year.

Section B (10X2)
Answer any two Questions

Question 9 (4+4+2)

- (a) The following ratio and information relate to the business of Lakhotia Traders Ltd.
 - (i) Credit period allowed to Debtors—2 months
 - (ii) Inventories Turnover Ratio- 8 times
 - (iii) Lag in payment to suppliers-- 1 month
 - (iv) Gross Profit Ratio 25%
 - (v) Opening Inventories Rs 105000
 - (vi) Gross profit for the year ended 31.3.2017 Rs 300000.

Find out (a)Sales (b)Debtors (c)Closing Inventories (d)Creditors
- (b) The following Financial Statement in summarized form, is from the books of Armstrong Ltd as at 31.3.2017.

Particulars	Note No.	Amount (Rs)
I. Equity & Liabilities		
1. Shareholders Funds		
(a) Share Capital- Equity Shares of Rs 10 each fully paid		

(b) Reserves & Surplus- General Reserve		1500000 600000
2. Share Application Money Pending Allotment		-----
3. Non Current Liabilities: (a) Long Term Borrowings-- 10% Debentures		500000
4. Current Liabilities: (a) Short Term Borrowings- Bank Loan (b) Trade Payables -- Creditors		200000 1200000
Total		4000000
II. Assets		
1. Non Current Assets: (a) Fixed Assets (i) Tangible Assets		1650000
2. Current Assets: (a) Current Investments (b) Inventories (c) Trade Receivables—Book Debts (d) Cash & Cash Equivalents- Cash in hand		160000 910000 1240000 40000
Total		4000000

Revenue from operations Rs 7440000; G.P. - Rs 744000. Calculate the following ratio for the year- (i) Debt- Equity Ratio (ii) Current Ratio (iii) Proprietary Ratio (iv) G.P. Ratio.

(c) Why are Prepaid Expenses not considered as Quick Assets?

Question 10 (2+4+4)

- (a) State two differences between Comparative and Common size financial Statement.
(b) From the following Balance Sheet of Usha Chemicals Ltd on 31.12. 16 and 31.12.17 prepare a Comparative Balance Sheet.

Balance Sheet of Usha Chemicals Ltd. as at 31st December 2016 and 2017

Particulars	Note No.	2016	2017
I. Equity & Liabilities			
1. Shareholders Funds; (a) Share Capital (b) Reserves & Surplus		500000 300000	1000000 200000
2. Share Application Money Pending Allotment		-----	-----
3. Non- Current Liabilities (a) Long Term Borrowings- 12% Loan		500000	800000
4. Current Liabilities (a) Other Current Liabilities			

		200000	400000
Total		1500000	2400000
II. Assets			
1. Non Current Assets:			
(a) Fixed Assets			
(i) Tangible Assets		1000000	1500000
2. Current Assets			
(a) Other Current Assets		500000	900000
Total		1500000	2400000

(c) Following data available from M& Co. for 2016 & 2017. Prepare a common size Income Statement.

Particulars	2016 (Rs)	2017 (Rs)
Revenue from Operations	1000000	1250000
Add: Commission Received	50000	75000
Add: Discount Received	100000	125000
Total	1150000	1450000
Cost of Revenue from Operations	800000	900000
Operating Expenses	200000	300000
Non Operating Expenses	50000	75000
Profit	100000	175000
Total	1150000	1450000

Question 11 (10)

Calculate Net Cash Flow from operating activities and Net Cash flow from Investing activities.

Balance Sheet of Grow More Ltd as at 31st March, 2017 & 2018

Particulars	Note No	31.3.17 (Rs)	31.3.16 (Rs)
I. Equity & Liabilities			
1. Shareholders Funds			
(a) Share Capital	1	1000000	800000
(b) Reserves & Surplus	2	300000	210000
2. Share Application Money Pending Allotment		-----	-----
3. Non- Current Liabilities			
Long Term Borrowings-- 10% Debentures		200000	-----
4. Current Liabilities			
Trade Payables- Creditors	3	700000	820000
Short Term Provisions		300000	170000
Total		2500000	2000000
II. Assets			
1. Non – Current Assets			
Fixed Assets			
(i) Tangible Assets	4	1300000	900000
		100000	---

Non- Current Investments			
2. Current Assets			
Inventories		400000	200000
Trade Receivables- Debtors		500000	700000
Cash & Cash Equivalents		200000	200000
Total		2500000	2000000

Notes to Accounts

Particulars	31.3.17 (Rs)	31.3.16 (Rs)
1.Share Capital		
Issued, Subscribed and Paid –up Capital:		
Equity Shares of Rs 10 each fully paid	1000000	800000
2.Reserves & Surplus		
General Reserve	200000	150000
Profit & Loss	100000	60000
	300000	210000
3. Short Term Provisions		
Provision for Taxation	100000	70000
Proposed Dividend	200000	100000
	300000	170000
4. Tangible Assets		
Plant & Machinery	700000	500000
Land & Building	600000	400000

Additional Information-

- (i) Depreciation @ 25% was charged on the opening value of Plant & Machinery
- (ii) During the year one old machine costing Rs 50000(WDV Rs 20000) was sold for Rs 35000.
- (iii) Rs 50000 was paid for Income Tax during the year.
- (iv) Building under construction was not subject to any depreciation.

-----XXXXXXXX-----

PRE-ISC EXAMINATION-2020

ECONOMICS

(Maximum marks: 80)

(Time allowed: Three hours)

(Candidates are allowed additional 15 minutes for only reading the paper.

They must NOT start writing during this time.)

Answer Question-1 (compulsory) from part I and five questions from part II. The intended marks for questions or part of questions are given in brackets [].

PART I (20 marks)

Answer all questions.

Question-1

Answer briefly each of the following questions (i) to (x): [10x2= 20]

- i) What is meant by price discrimination? Give one example of it.
- ii) Differentiate between revenue receipts and capital receipts of government.
- iii) What is demonstration effect? Briefly explain it with an example.
- iv) What is revaluation? How is it different from appreciation?
- v) Explain the concept of social cost with suitable example.
- vi) Briefly explain the M_1 and M_2 component of money supply in India.

- vii) What is seller's market? State one feature of it.
- viii) What is marginal propensity to consume? How is it related to marginal propensity to save?
- ix) Distinguish between progressive and proportional taxation.
- x) What are pure exchange transactions? Why are they excluded from the calculation of national income?

PART II (60 Marks)

Answer any 5 questions.

Question-2

- a) How do the following factors affect the supply for the commodity? [3]
 - i) Price of inputs
 - ii) Government's policy.
- b) Explain any two properties of an indifference curve. [3]
- c) Explain the law of equi-marginal utility using a schedule. [6]

Question-3

- a) Explain the relation between total product and marginal product using a diagram. [3]
- b) Explain the shapes of TR and MR curve under perfect competition. [3]
- c) Discuss any four features of oligopoly. [6]

Question-4

- a) Explain how you will measure the price elasticity of supply at different points on a non-linear supply curve. [3]
- b) Using a diagram show how a perfectly competitive firm incur losses in short run equilibrium. [3]
- c) Explain the concept of price-ceiling with the help of a diagram. State two measures which can be taken to make it effective. [6]

Question-5

- a) Discuss any two exceptions to the law of supply. [3]
- b) What is total variable cost? Explain the shape of the TVC curve. [3]
- c) State the law of variable proportion. Explain stage I and stage II of the production process. [6]

Question-6

- a) Explain any two methods of debt redemption. [3]
- b) What is fiscal deficit? Explain two implications of it. [3]
- c) Discuss any four measures taken by the government to solve the deficit in the balance of payments in a country. [6]

Question-7

- a) Explain any two ways in which a commercial bank can advance loans. [3]
- b) Explain one primary and one contingent function of money. [3]
- c) Discuss any four functions of the central bank of a country. [6]

Question-8

- a) What is propensity to save? Explain two properties of saving function. [3]
- b) What is inflationary gap? Explain any two monetary measures to correct it. [3]
- c) Explain the determination of equilibrium income and output using the aggregate demand and supply approach. [6]

Question-9

- a) What is domestic factor income? Explain all its components. [3]
- b) What are transfer incomes? How are they different from factor incomes? [3]
- c) From the following data, calculate national income by income and expenditure method. [6]

Item	Rs. in crores
i) Private final consumption expenditure	2000
ii) Compensation of employees	1200
iii) Government final consumption expenditure	1000
iv) Net factor income from abroad	-10

v) Net exports	-20
vi) Net indirect taxes	370
vii) Net domestic capital formation	800
viii) Depreciation	100
ix) Interest	310
x) Rent	200
xi) Mixed income of employed	900
xii) Profits	800

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Mock Examination-2020
Class XII (Science)
CHEMISTRY-I
THEORY

T.M=3hrs

F.M=70

Candidates are allowed additional 15 minutes for only reading the paper. They must not start writing during this time. All questions are compulsory.

Question no.1 is of twenty marks with four sub parts all of which are compulsory.

Question no.2 to 8 carry two marks with two questions having internal choice.

Question no.9 to 15 carry 3 marks with two questions having internal choice.

Question no. 16 to 18 carry 5 marks each. Each question has an internal choice.

In working out the problems, use the following date:

Gas constant $R=1.987 \text{ Cal deg}^{-1}\text{mol}^{-1}=8.314\text{Jk}^{-1}\text{mol}^{-1}=0.0821\text{L atmk}^{-1}\text{mol}^{-1}$.

$1\text{Latm}=1\text{dm}^3\text{atm}=101.3\text{J}$ Avagadro's no= 6.023×10^{23} .

PART-I
Answer all questions

Question-1

a) Fill in the blanks by choosing the appropriate word/words from those given in the bracket.[4x1]

[isotropic, donot , anisotropic, can, Raoult's, ohm^{-1} , $\text{ohm}^{-1}\text{cm}^{-1}$, $\text{ohm}^{-1}\text{cm}^2\text{eq}^{-1}$, salicylaldehyde, Reimer Tiemann reaction, formaldehyde]

- (i) Amorphous solid are-----whereas crystalline solids are-----.
- (ii) Ideal solutions obey----law and they-----form azeotropic mixture.
- (iii) The unit of conductance is----- and that of specific conductance is-----.
- (iv) When phenol is heated with chloroform in presence of alkali-----is obtained and the reaction is named as-----.

b) Select the correct alternative from the choices given:-[4x1]

- (i) When acetaldehyde is treated with Grignard reagent , followed by hydrolysis the product formed is;
 - (1) Primary alcohol (2) Secondary alcohol (3) Carboxylic acid (4) Tertiary alcohol.
- (ii) The geometry of XeF_6 molecule and the hybridisation of Xe atom in the molecule is :-
 - (1) Distorted octahedral and sp^3d^3 (2) Square planar and sp^3d^2 (3) Pyramidal and sp^3
 - (4) Octahedral and sp^3d^3 .
- (iii) In the complex $[\text{Fe}(\text{CN})_6]^{-3}$ and $[\text{Pt}(\text{en})(\text{H}_2\text{O})_2(\text{NO}_2)(\text{Cl})]^{+2}$ the respective oxidation numbers of central metal atoms are:
 - (1) +3 and +4 (2) +6 and +4 (3) +6 and +3 (4) +3 and +3
- (iv) Which , among the following polymers, is a polyester:
 - (1) melamine (2) Bakelite (3) terylene (4) polythene.

c) Match the following:- [4x1]

- | | |
|------------------|---------------------|
| (i) Disaccharide | (a) obnoxious smell |
| (ii) Carbylamine | (b) sucrose |

- (iii) Anhydrous $ZnCl_2 + conc. HCl$ ©Hexaamminecobalt(III)ion
(iv) Low spin complex, d^2sp^3 (d) Lucas reagent.

d) Answer the following questions:- [4x2]

- (i) To which class of compounds does IF_7 belong? What is the structure of the molecule?
(ii) Account for the following, Zn^{+2} compounds are white in colour but Cu^{+2} compounds are coloured, though both zinc and copper are d-block elements. [At. No, Zn=30, Cu=29]
(iii) Write short notes on:-
(1) Hardy-Schulz's rule (2) Peptization.
(iv) The reduction potential of a metal 'X' is -0.76 V and that of 'Y' is -2.38 V. Which of the two metals is a stronger reducing agent? Give a reason for your answer.

Question 2

A substance decomposes by following first order kinetics. If 50% of the compound is decomposed in 120 minutes, how long will it take for 90% of the compound to decompose. [2]

OR

A chemical reaction $2X \rightarrow 4Y + Z$ in gas phase occurs in a closed vessel. The concentration of Y is found to be increased by 5×10^{-3} mol/L in 10 seconds. Calculate:- (i) the rate of appearance of Y. (ii) rate of disappearance of X. [2]

Question 3

What are the advantages of synthetic detergents over soaps? [2]

Question 4

What happens when: (i) Chloroform is heated with silver powder (ii) Phenol is treated with chloroform in presence of alkali.

Question 5

Give the monomer of the following polymers (i) Teflon (b) Bakelite.

Question 6

Deficiency of what vitamins will cause the following diseases (i) Night blindness (ii) Scurvy? [2]

Question 7

(a) How will you convert:- (i) Benzene to benzoic acid (ii) Acetamide to methyl amine. [2]

OR

(b) How will you obtain the following (i) Benzoic acid to aniline. (ii) Acetone to acetone oxime.

Question 8

The freezing point of a solution containing 0.3g acetic acid in 30g of benzene is lowered by $0.45^\circ C$. Calculate the Van't Hoff factor. (Given: K_f for benzene = $5.12 K Kg/mol$). [2]

Question 9

Consider the cell reaction:- $2Ag^+ + Cd \rightarrow 2Ag + Cd^{+2}$

The standard reduction potentials of Ag^+/Ag and Cd^{+2}/Cd are 0.80 volt and -0.40 volt respectively.

- (i) cell presentation. Give the
(ii) the E°_{cell} . What is
(iii) What will be emf of the cell if $[Cd^{+2}]$ is 0.1M and $[Ag^+]$ is 0.2M. [3]

OR

A 0.05M NH_4OH solution offers resistance of 50 ohm to a conductivity cell at 298K. If the cell constant is $0.50 cm^{-1}$ and molar conductance of NH_4OH at infinite dilution is $471.4 ohm^{-1} cm^2 mol^{-1}$. Calculate :-

(i) Specific conductance (ii) Molar conductance (iii) degree of dissociation.

Question 10

A bcc element has a cell edge of 420 pm. Calculate its density in g/cm^3 . Given that atomic mass of the element is 65. ($N_A = 6.023 \times 10^{23}$) [3]

Question 11

In the extraction of zinc from zinc blend:- [3]

- (i) Give an equation to show how zinc oxide is converted to Zn.
(ii) How is impure Zn finally electro-refined?

Question 12

a) How does $K_2[PtCl_4]$ get ionised when dissolved in water? Will it form precipitate when $AgNO_3$ solution is added to it? Give a reason for your answer. [2]

b) Write the formula of the compounds: [1]

- (i) Potassium trioxalatoaluminate(III) (ii) Hexaamminecobalt(II) sulphate.

Question 13

1) Give balanced equation for the following reaction: [2]

- (i) Potassium dichromate is treated with acidified ferrous sulphate solution.
(ii) Potassium permanganate is heated with concentrated hydrochloric acid.

2) Draw the structure of: [1]

- (i) Chromate ion (ii) Dichromate ion.

OR

b) Explain the following: [3]

(i) Zr and Hf exhibit similar properties. (ii) Paramagnetic character in 3d transition series elements increases up to Mn and then decreases. (iii) Transition metals form complex compounds.

Question 14

Give the balanced equation for the following reactions. [3]

(i) Sodium ethoxide is treated with ethyl bromide. (ii) Aniline and bromine water.
(iii) Ethylamine and nitrous acid.

Question 15

Define each of the following terms: [3]

(i) Micelles (ii) Coagulation (iii) Tyndall effect.

Question 16

[5]

(i) Why is the freezing point depression (ΔT_f) of 0.4 M NaCl solution nearly twice that of 0.4 M glucose solution?

(ii) Define Cryoscopic constant.

(iii) If the molality of an aqueous solution of cane sugar is 0.4445, what is the mole fraction of cane sugar?
{H=1, O=16}

OR

b) (i) 0.5 g of a non-volatile solute is dissolved in 100 g of ethyl acetate at 20°C . The vapour pressure of solution and pure ethyl acetate are 72.8 torr respectively at 20°C . Calculate the molecular weight of the solute.

(ii) Define azeotropic mixture, with suitable examples.

(iii) Sodium chloride and CaCl_2 are used to clear snow from roads, Why?

Question 17

a) (i) Give balanced equation for the following reaction:

1. Phosphorous reacts with concentrated H_2SO_4 .

2. Ozone is treated with KI solution.

(ii) Discuss the theory involved in the manufacture of sulphuric acid by contact process.

OR

b) Account for the following:

(i) SF_6 exists but OF_6 does not, though both oxygen and sulphur belong to the same group in the periodic table.

(ii) Fluorine gives only one oxyacid but chlorine gives a series of oxyacids.

(iii) Interhalogen compounds are more reactive than their constituent elements.

2) (i) Write balanced chemical equation for the following.

(i) Cl_2 is passed through hot concentrated NaOH solution. (ii) Ozone and PbS.

Question 18

a) (i) Give one test to distinguish between the following pairs of compounds. [5]

(1) Acetone and phenol (2) Ethanol and propanol-2 (3) Acetaldehyde and benzaldehyde.

(ii) Draw a graph which can be used to calculate the activation energy.

(ii) What is meant by promoter?

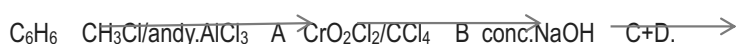
OR

b) (i) What is the order of reaction whose rate constant has the same unit as the rate of reaction.

(ii) Write chemical equations to illustrate the following name reactions.

(1) Clemmensen reduction (2) Sandmeyer's reaction.

(iii) Identify the products A, B, C, and D.



[Attempt all the questions from section A and four other questions from section B on at least three of the prescribed textbooks.

First fifteen minutes to be spend in reading question paper.]

Section- A [50 marks]

1- fuEu esa ls fdllh ,d fo" k; ij yxHkx 400 'kCnksa esa fuca/k fy[ksa& 20

d- vf'k{kk ns'k dh mUufr esa ck/kd gSA bls fy, vki D;k iz;kl djuk pkgasxh\ viuk fopkj izLrqr djsaA

[k- fdllh jksekapd jsy ;k=k dk o.kZu djsaA

x- ns'kHkfDr dh ygj fL=;ksa esa Hkh ns[kus dks feyrk gSA bls dbZ mnkgj.k bfrgkl esa ns[kus dks feyrs gSaA fdllh ,d ohjkaxuk ds ohjkiw.kZ dk;ksaZa dk o.kZu djsaA

?k- ,d ekSfyd dgkuh fy[ksa ftldk fo" k; gksxk& ^^;Fkk jtkk rFkk iztkA**

M- LoLFk 'kjhj esa LoLFk eflr"d dk fodkl gksrk gS& bl laca/k esa viuk fopkj izLrqr djsaA

2-

vifBr xn~/ka'k&

izd' fr dk vfuok;Z fu;e gS fd ftldks vki tSlk le>rs gSa og vkidks Hkh oSlk gh le>rk gSaA ukxfjd ds dRrZO;ksa vkSj vf/kdkjksa dk Kku vLi' ;rk #ih dyad dks geesa ls fudky nsxk vkSj lPpk Hkzkr' &Hkko gekjs chp QSyk;sxkA og gedks crk;sxk fd tks ckr vius dks cqjh yxrh gS og nwljksa dks Hkh cqjh yxrh gSA og foo'k djsxk fd tSlk O;ogkj ge nwljksa ls pkgrs gSa] oSlk gh O;ogkj ge nwljksa ds lkFk djsaA lc phtsa pkgrh gSa fd gekjs lkFk ln~O;ogkj fd;k tk;] pkgs ;s tM+ gksa] pkgs psruA nqO;Zogkj djus ij lHkh oLrq, Wa viuk cnyk ysaxhA ;fn HkkbZ] ukSdj] iM+kslh vkfn psru thoksa ls vki nqO;Zogkj djrs gSa] rks os viuk cnyk ysrs gh gSaA vpsru oLrq, Wa Hkh ,slk djrh gSaA twrs ds lkFk nqO;Zogkj dhft,xk] mls lkQ ugha jf[k;axk] rks og dkV ysxkA Nkrs dh fQdz u dhft;sxk mlesa ykijokgh ls is'k vkb;sxk rks le; vkus ij vki mldh dekuh VwVh vkSj diM+k dVv vFkkZr~ mls csdlk ikb;sxkA ;fn lwbZ dh fQdz u jf[k;sxk rks csoDr og vkids 'kjhj esa pqHkdj vius vflrRo dk izek.k vkidks nsxhA dk;Zdq'ky iq#"k lcds lkFk lnk vPNk vkSj mfpr O;ogkj djrk gSA bl dkj.k og viuh lc oLrq, W gj le; Bhd izdkj ls Bhd lFkku ij ilrk gS vkSj lc phtsa mldh lsok djrh gSaA mldk ?kj xUnk ugha jgrkA mlds diM+s eSys ugha jgrsA og lnk fpM+fpM+k;k gqvk] ?kcjk;k] nwljksa ij viuk nks" k e<+rk gqvk ijs'kku ugha ik;k tkrkA mldk 'kjhj] mldk eflr"d] lc LoLFk] fLFkj vkSj izlUu jgrs gSaA iz'uksRj&

d- dRrZO; vkSj vf/kdkj gesa D;k crkrk gS\ 4

[k- ys[kd us nqO;Zogkj vkSj ln~O;ogkj dk dSlk fo'ys" k.k fd;k gS\ 4

x- tM+ ;k psru oLrq, W gels fdl izdkj ds O;ogkj dh bPNk djrh gS\ 4

?k- vxj ge tM+ oLrqvksa ds izfr ykijokg jgsaxs rks mudk gekjs izfr dSlk joS;k jgsxk\ 4

M- dk;Zdq'ky O;fDr fdl izdkj viuk dke djrk gS\ 4

3-

fuEu okD;ksa dks

'kqn~/k djsa& 5

d- lkr fnu esa lirk gksrk gSA

[k- nsf[k;s] 'kksj er djksA

Xk- bu fnuksa lHkh etnwjksa gM+rky esa gSA

?k- mls lkWai us [kk fy;kA

M- dkyk v[kj xk; cjkcjA

Questions are given in ().

Part- I (10X2)

Question 1

- (i) Define Planning
- (ii) How is Controlling closely related to Planning?
- (iii) How is Public Deposit a source of financing?
- (iv) What is Equity Principle of Management?
- (v) What is a Consume Association?
- (vi) What are Psychological barriers to Communication?
- (vii) What is Universality of Management Principles?
- (viii) What is Monetary Policy?
- (ix) Name four elements of Directing as a function of Management.
- (x) How is Management a continuous process?

Question 2 (5+4+3)

- (a) Explain any five reasons why a manager should understand business environment properly.
- (b) Explain tenure and Unity of direction principle of Management given by Fayol.
- (c) How does social environment of business affect business Organization?

Question 3 (5+4+3)

- (a) Explain any five factors which affect Fixed Capital requirement.
- (b) Explain the forms in which Commercial banks provide financial assistance.
- (c) Management is Universal- what does it imply?

Question 4 (5+4+3)

- (a) 'Span of Control in an Organization depends on several factors'. Explain any five such factors.
- (b) In the present day business organizations, communication serves a number of purposes. Explain any four such purpose.
- (c) Distinguish between method and procedure.

Question 5 (5+4+3)

- (a) What is Maslow's theory of motivation? Explain briefly any four needs mentioned in this theory.
- (b) Explain the mechanism of online payments.
- (c) Explain the difference between Formal Organization and Informal Organization on any three bases.

Question 6 (5+4+3)

- (a) Explain any five factors which must be considered in choosing Capital Structure.
- (b) 'Management is both Science and Art'. Explain.
- (c) Write a note on Marketing Mix.

Question 7 (5+4+3)

- (a) What is meant by indirect channels of distribution? Explain the types of indirect channels of distribution.
- (b) Explain any four types of Debentures through which a Public Limited Company can collect its borrowed capital from the Public.
- (c) What is meant by trade credit? Mention two advantages of trade credit as a short term source of finance.

Question 8 (5+4+3)

- (a) Discuss any five importance of Marketing.
- (b) What is meant by RTGS? Give any two features of RTGS.
- (c) Explain the first three steps involved in selecting suitable workforce in an Organization.

Question 9 (5+4+3)

- (a) Explain the importance of business environment in shaping the future of a business

- (b) Effectiveness of leadership depends on the qualities of the leader. Explain any four qualities that a good leader should possess.
- (c) Explain three disadvantages of Preference shares from the investors point of view.

CLASS XII PRE - ISC EXAMINATION - 2020
BIOLOGY
Paper 1 (THEORY)

R.TIME: 15 MINS. / W.TIME : 3 HRS / F.M : 70

This paper comprises of **TWO PARTS** – Part I and Part II.

Answer **all** questions.

Part I contains one question of 20 marks having five subparts,
Part II consists of Sections A, B and C.

Section A contains **seven** questions of **two** marks each,

Section B contains **seven** questions of **three** marks each and

Section C contains **three** questions of **five** marks each.

Internal choices have been provided in **two** questions in Section A,
two questions in Section B and **all three** questions of Section C.

PART I [20marks]

Answer **all** questions

Question 1:

- (a) Answer the following questions briefly and to the point: [8X1=8]
- (i) Mention the use of Propionibacterium.
 - (ii) What are cry proteins?
 - (iii) Name the initiation codon and termination codon of protein synthesis.
 - (iv) What condition is necessary for cryopreservation?
 - (v) In insulin molecule, which bond joins chain A and B together?
 - (vi) Differentiate between apocarpous and syncarpous ovary.
 - (vii) State two benefits of artificial insemination.
 - (viii) What is the biological significance of golden rice production?
- (b) Each of the following questions has four choices. Choose the best option in each case: [4X1=4]
- (i) Secondary sewage treatment is mainly a:
(A) Chemical process (B) Biological process (C) Mechanical process (D) Physical process
 - (ii) EcoRI has been isolated from:
(A) E. coli (B) Thermus aquaticus (C) Agrobacterium tumefaciens (D) None of these
 - (iii) After ovulation in a female mammal, the structure which is formed by ruptured follicle is:
(A) Corpus albicans (B) Zona pellucida (C) Graafian follicle (D) Corpus luteum
 - (iv) HIV attacks:
(A) B-cells (B) T-cells (C) Antigen presenting cells (D) Helper T-cells
- (c) Give one significant contribution of each of the following scientists: [4X1=4]
- (i) T.R. Malthus (ii) P. Ehrlich (iii) G. Gamow (iv) Lindermann
- (d) Give the scientific term: [2X1=2]
- (i) The science of producing genetically modified organisms.
 - (ii) The agents and factors which result in pollution.
- (e) Give a reason for each of the following: [2X1=2]

- (i) Offspring formed by sexual reproduction exhibits more variation than those formed by asexual reproduction.
(ii) Testes descend into the scrotum before birth.

PART II
SECTION A [14 marks]

Answer **all** questions.

Question 2: [2]

(a) State four applications of DNA fingerprinting.

OR

(b) Differentiate between analogous organs and homologous organs. Give examples also.

Question 3: [2]

Why are 'molecular scissors' so called? Write their use in biotechnology.

Question 4: [2]

Define parthenogenesis. Give two examples.

Question 5: [2]

(a) What is Red Data Book?

OR

(b) What is polyblend? Name a person associated with it.

Question 6: [2]

Name the pathogen that causes amoebiasis in humans. Give the symptoms of the disease.

Question 7: [2]

State an important function of the following:

(a) Epididymis (b) Cowper's gland (c) Leydig cells (d) Fallopian tube

Question 8: [2]

What is Integrated Pest Management? Why biofertilizers are preferred over chemical fertilizers?

SECTION B [21 marks]

Answer **all** questions.

Question 9: [3]

Name the genetic disorder in a human having 44 + XXY karyotype. Mention two diagnostic features of this disorder.

Question 10: [3]

Mention three features of each of the following:

(a) Dryopethicus (b) Cro magnon man

Question 11: [3]

(a) What is gene therapy? Illustrate using the example of adenosine deaminase (ADA) deficiency.

OR

(b) Discuss the features of an ideal cloning vector.

Question 12: [3]

Explain the structure of a typical antibody.

Question 13: [3]

(a) What is colostrum? How is milk production in humans hormonally controlled?

OR

(b) Discuss three contrivances for prevention of self pollination.

Question 14: [3]

(a) Why are the plants raised through micropropagation termed as somaclones?

(b) Mention two advantages of this technique.

Question 15: [3]

Discuss the International initiatives taken for mitigating global changes.

SECTION C [15 marks]

Answer **all** questions.

Question 16:

(a) Define biodiversity. Who coined the term biodiversity? Discuss the factors that lead to the extinction of species. [1+1+3]

OR

(b) Discuss the impact of global warming on the environment and living organisms. [5]

Question 17:

(a) Write a brief account of the structure and functions of human placenta. [2+3]

OR

(b) Describe the steps involved in the process of fertilization in seeded plants. [5]

Question 18 :

(a) Discuss the essential features of the genetic code. [5]

OR

(b) Explain briefly the elongation of giraffe's neck according to Lamarck and Darwin. [5]

MOCK EXAMINATION 2019

Class-XII

Time : 3 Hrs.

ENGLISH PAPER-II

F.M. 100

SECTION-A
The Tempest

QUESTION 1

[25]

Choose two of the passages (a) to (c) and answer as briefly as possible the questions that follow:

g) "Prospero : And mine shall
Hast thou, which art but air, a touch, a feeling
Of their afflictions, and shall not myself,
One of their kind, that relish all as sharply.
Passion as they, be kindlier moved than thou art?
Though with their high wrongs I am struck to the quick,
Yet with my nobler reason gaitist my fury
Do I take part the rarer action is
In virtue than in vengeance : they being penitent.

- i. How did Prospero feel about his project?
- ii. Where were Alonso and his companion lodged? In which condition were they ?
- iii. Explain the lines :
"the rarer action is
In virtue than in vengeance"
- iv. What does Prospero decide to do about his enemies? What does he ask Ariel to do?
- v. What opinion do you form of Prospero from the extract?
- vi. Give the meanings of the following words: (a) afflictions (b) penitent.

h) Antonio : O, out of that no hope
What great hope have you? No hope that way is
Another way so high a hope that even
Ambition cannot pierce a wink beyond
But doubt discovery there.

- i. To whom is Antonio speaking? Where are they?
- ii. Explain the circumstances which brought them to this place.
- iii. To what does Antonio refer through the words "no hope"?
- iv. How does Antonio seek to comfort his companion?

- v. Which wrong deed had Antonio committed earlier?
- i) Caliban : A plague upon the tyrant that
I serve!
I'll bear him no more sticks,
but follow thee
Thou wondrous man.
- i. Who is Caliban? Whom does he refer to as "tyrant"?
- ii. Who is the "Wondrous man"? Why does he appear Wondrous to Caliban?
- iii. What is Caliban's attitude towards the 'tyrant'? Why is he afraid of this person?
- iv. What does Caliban promise to do for the "Wondrous man" soon after these lines?
- v. Who else is present here? What role does this person play in the drama?
- vi. Give the meanings of the following words: (a) Plague (b) Wondrous.

Section B

Answer four question on at least three text books.

Question 2.

- a. Give an account of the conspiracy in Act 2, stating how it was frustrated? Who was the first to broach the plot and by what argument did he win over the others ?
- b. Why does Ariel try to instigate quarrels among the plotters? What is the result? [6]
- c. Describe the meeting of Trinculo and Caliban. [6]

Question 3.

What does Prospero tell Miranda about the loss of his dukedom and arrival at the island? [20]

Echoes

Question 4

- a. What does Klausner speak about to Dr. Scott after the branch destroyed his machine? What does it tell us about him? [8]
- b. Why had he called the doctor early in the morning? [6]
- c. The story gives us an absorbing picture of a devoted researcher. Discuss. [6]

Question 5

What according to you is the theme of the short story 'Salvatore'? Elaborate with close reference to the text. [20]

Question 6:

What was so special about Mr. Gessler that the author started to share an emotional bond with him, something much beyond a regular client _ a serving relationship. [20]

Reverie

Question 7

- a. Referring to the poem 'Birches' relate the nostalgia one experiences on revisiting places where childhood was spent. [8]
- b. Why does an adult long for experiences of childhood? [6]
- c. How have the concepts of 'Endurance of life's struggles' and Earth in the right place for love brought about in the Birches? [6]

Question 8

'Desiderata' is a humble gift from Max Ehrmann to the entire humanity, which offers a code for life. Elaborated. [20]

Question 9

How is the Dover Beach a lament for humanity in the face of modernity and progress? [20]

LORETO CONVENT ASANSOL
MOCK EXAMINATION JANUARY 2020

CLASS XII MATHEMATICS

(Maximum Marks: 100)

(Time allowed: Three hours)

(Candidates are allowed additional 15 minutes for **only** reading the paper.
They must NOT start writing during this time.)

Candidates are required to attempt all questions from **Section A** and all questions **EITHER** from **Section B OR Section C**

Section A: Internal choice has been provided in three questions of four marks each and two questions of six marks each.

Section B: Internal choice has been provided in two questions of four marks each.

Section C: Internal choice has been provided in two questions of four marks each.

All working, including rough work, should be done on the same sheet as, and adjacent to the rest of the answer.

The intended marks for questions or parts of questions are given in brackets [].

SECTION A (80 MARKS)

1(i) If the binary operation * on the set of integers Z is defined by $a * b = a + b - 5$, then write the identity element of * in Z.

(ii) Evaluate: $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix} + \begin{bmatrix} 4 & 3 \\ 2 & 1 \end{bmatrix}$

(iii) Prove that for $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$, $A + A^t$ is a symmetric matrix.

(iv) Without expanding at any stage find the value of $\begin{vmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 5 \end{vmatrix}$

(v) Find $\frac{dy}{dx}$ when $y = \sin^{-1} x$

(vi) Evaluate: $\int_0^1 x^2 dx$

(vii) Find the point on the curve $y = 3x^2 - 2x + 1$ at which the slope of the tangent is 4.

(viii) Evaluate: $\int_0^1 x^2 dx$

(ix) Solve the given differential equation: $\frac{dy}{dx} = 2x$

(x) If $P(A) = 0.2$, $P(B) = p$, $P(A \cup B) = 0.6$, A and B are given to be independent events, find the value of p. [10 x 2 = 20]

2. Let R be the set of real numbers. Show that the function $f : R \rightarrow R$ defined by $f(x) = 4x + 5$ is invertible. Also find f^{-1} [4]

3. Using properties of determinant prove the following:
 $\begin{vmatrix} 1 & 2 & 3 \\ 2 & 3 & 4 \\ 3 & 4 & 5 \end{vmatrix} = 0$ [4]

4. If $x^y = e^{-xy}$ prove that $\frac{dy}{dx} = -\frac{y}{x}$ [4]

5. Evaluate : $\int_0^1 x^2 dx$ [4]

6. By using the properties of definite integral evaluate: $\int_0^1 x^2 dx$ [4]

7(a) Prove: $\int_0^1 x^2 dx = \frac{1}{3}$
OR

(b) Solve the given equation: $\int_0^1 x^2 dx = \frac{1}{3}$ [4]

8(a) Examine the following function for continuity:
 $f(x) = \begin{cases} x^2 & \text{if } x < 1 \\ x & \text{if } x \geq 1 \end{cases}$

$$\frac{3}{2}, x \geq 2$$

OR

(b) Differentiate $\frac{3}{2}x^2$ w. r. t. $\tan^{-1} x$ [4]

9(a) Verify Rolle's Theorem for the following function and find point (or points) in the interval where the derivative is zero: $f(x) = \sin 2x$ in $[\frac{\pi}{4}, \frac{3\pi}{4}]$

OR

(b) Evaluate: $\int_0^{\pi/2} \sin 2x \cos x dx$ [4]

10(a) Find the equation of the normal to the curve $y = x^2 + 2x - 3$ which are parallel to the line $x + 3y = 2$.

OR

(b) Show that the surface area of a closed cuboid with square base and given volume is minimum when it is a cube. [4]

11. Using matrix method, solve the given system of equations:

$$3x + y + z = 1; 2x + 2z = 0; 5x + y + 2z = 2. \quad [6]$$

12. Ten tickets are numbered 1 to 10. Two tickets are drawn one after the other at random. Find the probability that the number on one of the tickets is a multiple of 5 and the other a multiple of 4 when the tickets are drawn

(i) without replacement (ii) with replacement. [6]

13(a) A doctor is to visit a patient. From the past experience, it is known that the probability that he will come by public transport, scooter, taxi or personal car are respectively $\frac{1}{10}$, $\frac{1}{5}$, $\frac{3}{10}$ and $\frac{2}{5}$. The probabilities that he will be late are $\frac{1}{4}$, $\frac{1}{3}$ or $\frac{1}{12}$ if he comes by public transport, scooter or taxi respectively, but if he comes by personal car he will not be late. When he arrives, he is late. What is the probability that he came by scooter?

OR

(b) An urn contains 3 white and 6 red balls. Four balls are drawn one by one with replacement from the urn. Find the probability distribution of the number of red balls drawn. Also find the mean and variance of the distribution. [6]

14(a) Solve the given differential equation: $\frac{dy}{dx} + \frac{y}{x} = \frac{1}{x^2}$

OR

(b) Solve the given differential equation: $(x^2 + y^2) dy = xy dx$, when $x = 1, y = 1$. [6]

SECTION B [20 MARKS]

15(a) Prove that $\vec{a} \cdot (\vec{b} \times \vec{c}) = \vec{b} \cdot (\vec{c} \times \vec{a}) = \vec{c} \cdot (\vec{a} \times \vec{b})$

(b) If the lines $\frac{x-1}{2} = \frac{y+1}{-3} = \frac{z-3}{4}$ and $\frac{x-3}{4} = \frac{y-3}{3} = \frac{z-1}{-2}$ are perpendicular, then find the value of k .

(c) Find the angle between the planes $3x - 6y + 2z = 7$ and $2x + 2y - 2z = 5$. [2+2+2]

16(a) Express the vector $\vec{a} = 2\hat{i} + 3\hat{j} + 4\hat{k}$ as the sum of two vectors such that one is parallel to the vector $\vec{b} = \hat{i} + \hat{j} + \hat{k}$ and the other is perpendicular to \vec{b} .

OR

(b) Show that the four points with position vectors $\vec{a}, \vec{b}, \vec{c}, \vec{d}$ are coplanar. [4]

17(a) Show that the lines $\frac{x-1}{2} = \frac{y+1}{-3} = \frac{z-3}{4}$ and $\frac{x-3}{4} = \frac{y-3}{3} = \frac{z-1}{-2}$ intersect. Also find their point of intersection.

OR

(b) Find the equation of the plane passing through the point $(1, 2, 3)$ and perpendicular to the planes $2x - y + 3z = 4$ and $x + y + z = 1$. [4]

18. Find the area of the smaller region bounded by the ellipse $\frac{x^2}{16} + \frac{y^2}{9} = 1$ and the straight line $y = x + 3$. [6]

SECTION C [20 MARKS]

- 19(a) Find the breakeven points when $R(x) = 750x - 5x^2$, $C(x) = 100x + 20000$.
 (b) If $R(x) = 300x - x^2/5$ then find the total revenue when $MR = 0$.
 (c) The mean of x is 36 and of y is 85, standard deviation of x is 11 and of y is 8. Correlation coefficient between x and y is 0.66 Find the two regression coefficients. [2+2+2]
- 20(a) The average cost function AC for a commodity is given by $AC = x + 5 + 36/x$ in terms of output x . Find (i) the total cost and marginal cost (ii) the output for which AC increases.
 OR
 (b) A product can be manufactured at a total cost $C(x) = x^2/100 + 100x + 40$, where x is the number of units produced. The price at which each unit can be sold is given by $p(x) = 200 - x/400$. Determine the production level x at which the profit is maximum. What is the price per unit and total profit at this level of production? [4]

- 21(a) The following observations are given:

x	1	2	3	4	5	6	7	8	9
y	4	8	2	12	10	14	16	6	18

Estimate the value of x when the value of y is 5.

OR

- (b) From the equations of the two regression lines $3x + 2y - 26 = 0$ and $6x + y - 31 = 0$, find (i) the regression coefficients (ii) the coefficient of correlation (iii) the standard deviation of y , given variance of x is 25. [4]
22. A company produces two types of items P and Q. Manufacturing of both items requires the metals gold and copper. Each unit of item P requires 3 gm of gold and 1 gm of copper while that of item Q requires 1 gm of gold and 2 gm of copper. The company has 9 gm of gold and 8 gm of copper in store. If each unit of item P makes a profit of Rs 50 and each unit of item Q makes a profit of Rs 60, determine the number of units of each item that the company should produce to maximize profit. [6]

Political Science
Class - XII, Mock 2019-20

Time : 3 hrs.
 Full Marks:- 80

Answer all the Questions from Part – I and five questions from Part – II, choosing three questions from Section – A and two questions from Section – B.

PART I
(Compulsory)
(10 x 2 = 20)

Question 1

- (i) What is meant by political homogeneity in a Parliamentary form of government?
- (ii) What is an evolved Constitution? Give an example.
- (iii) Distinguish between a single member and multi member constituency.
- (iv) What is an unicameral legislature? Give an example.
- (v) Explain suspensory veto of the U.S president.
- (vi) What is meant by the word "Secular" in the preambles?
- (vii) What is meant by the term judicial restraint?
- (viii) Explain the composition of Gram Sabha.
- (ix) Mention any two types of political violence in India.
- (x) Mention the difference between fundamental rights and directive principles.

PART II
SECTION A
Attempt **any three** questions

Question 2

- a) Distinguish between the Unitary form of government and Federal form of government. (6)
- b) Discuss any six essential features of a Presidential form of government. (6)

Question 3

- a) Why is Universal Adult Franchise the most accepted form of representation in a modern State? (6)
- b) Explain three merits and three demerits of single party system. (6)

Question 4

- a) Distinguish between the political and permanent executive in India. (6)
- b) What are the powers of the Prime Minister? (6)

Question 5

- a) Examine the functions of the Legislature. (6)
- b) The Lok Sabha is more powerful than the Rajya Sabha – Elucidate. (6)

Question 6

- a) Examine the functions of the Supreme Court in India. (6)
- b) Critically evaluate the principles of Judicial Review, with reference to India. (6)

SECTION B

Answer **two** questions

Question 7

- a) Describe any three salient features of the Indian Constitution. (6)
- b) Explain the “right to equality’ as given in the Indian Constitution. (6)

Question 8

- a) Briefly explain the composition and tenure of a Municipal Corporation. (6)
- b) Described the challenges faced by the local self government. (6)

Question 9

- a) What is the role of caste in Indian Politics? Discuss. (6)
- b) What is Communalism? State any six causes of Communalism in India. (6)

Mock Examination - 2019
Class- XII
Subject- Business Studies
F.M- 80
Time- 3 hrs

Answer all Questions from Part I , and any five Questions from Part II. The intended marks for each Questions are given in ()

Part-I (10X2)

Question 1

- (i) Give the meaning of Intra B Commerce

- (ii) Who is an Outsourcer?
- (iii) Define Globalization.
- (iv) What is a bond?
- (v) Give the meaning of Report.
- (vi) What is meant by unsolicited application?
- (vii) Explain any two limitations of visual communication.
- (viii) What is the objective of conducting an exit interview?
- (ix) Why should a communicator be precise and brief while communicating?
- (x) Distinguish between morale and motivation.

Part-II
Answer any five Question

Question 2 (4+8)

- (a) Distinguish between Time rate system and Piece rate system.
- (b) As a manager of a Co. write a letter of complaint to XYZ, Furniture for having delivered some chairs in broken condition and asking them for replacement.

Question 3 (4+8)

- (a) Explain the concept B2 C Commerce
- (b) Explain the concept of continuum leadership

Question 4 (4+8)

- (a) State and explain any four non-monetary incentives that can be used to motivate employees
- (b) Explain the need for business correspondence.

Question 5 (4+8)

- (a) Explain the functions of business letters.
- (b) What is apprenticeship training? Give three advantages and three disadvantages of the same.

Question 6 (4+8)

- (a) Explain the disadvantages of outsourcing.
- (b) Explain- (i) GDR's (ii) Angel Investors

Question 7 (4+8)

- (a) Explain the importance of Job analysis.
- (b) Explain any four important barriers to communication and suggest measures to overcome the barriers mentioned by you.

Question 8 (4+8)

- (a) Explain the various types of Training.
- (b) Explain the various elements of Business Letters.

Question 9 (4+8)

- (a) Grapevine is an unavoidable type of communication.
- (b) Explain the role of:
 - i) Insurance Regulatory and Development Authority of India
 - ii) Pension Fund Regulatory and Development Authority.