No. of Pages: 2

GACR

+3, 3rd SEMESTER EXAMINATION-2018

(ARTS)

SOCIOLOGY (CORE-VI)

Time: 3 Hours | Full Marks: 80

Answer the questions as per instruction.
The figure in the right hand margin indicate marks.

GROUP-A [2x8]

1. Answer any EIGHT questions.

(a) Write any two distinctions between sex and gender.

(b) What is gender socialization?

(c) What are the arguments of socialistic Feminism?

(d) Who are the advocates of Liberal Feminism?

(e) What is WAD?

(f) What is Gender Development Index?

(g) What are the indicators of women Health status?

(h) What are the causes of wage differences between male and female?

(i) Name some of the prominent women leaders of the National Movement in India.

(j) Mention any two policy to improve the status of women in India.

GROUP-B

Answer any FOUR of the following. [16x4]

2. How does patriarchy give rise to gender inequality?

3. Describe the origin and growth of feminism.

(P.T.O...)

4. Discuss various aspects of women empowerment.

5. Narrate the role of women in independent India.

6. Briefly describe the policy and provisions for improvement of women in the health and education.

7. Describe the Liberal theory of Feminism.

8. Discuss the problems the women face in receiving higher education in India.

- x - x - x -

No. of Pages: 2

GACR

+3, 3rd SEMESTER END EXAMINATION-2018

(ARTS)

Sub.- **Psychology**

PAPER : Core- VI

Time: 3 Hours Full Marks:60

The figure in the right hand margin indicate marks.

Question No.1 is compulsory, answer any FOUR from the rest.

Group - 'A'

[2x6

1. Answer any SIX of the following.
   a) Write two goals of social psychology.
   b) What is correlational method ?
   c) Define self concept.
   d) Write about ABC model of attitude.
   e) Differentiate between prejudice and stereotype.
   f) What do you mean by prosocial behaviour?
   g) Mention two techniques of controlling aggression.
   h) Write two characteristics of a group.

[P.T.O.]

Group - 'B'

[12x 4]

Answer any FOUR questions.

2. Define social psychology and discuss its nature.
3. What do you mean by person perception? How self concept can be boosted?
4. What is prejudice? Discuss the factors relating to acquisition of prejudice.
5. Define attitude. Discuss the factors affecting change of attitude.
6. What is leadership? Discuss the function of a leader.
7. Define aggression. Discuss the social and personal determinants of aggression.
8. Write short notes on:
   a) Naturalistic observation
   b) Impression formation

■■■

No. of Pages: 2

GACR
+3, 3rd SEMESTER END EXAMINATION-2018
(ARTS)

Sub.- Philosophy
PAPER : Core- VI

Time: 3 Hours | Full Marks:80

The figure in the right hand margin indicate marks.

Question No.1 is compulsory, answer any FOUR from the rest.

Group - 'A'

[2x8]

1. Answer any EIGHT of the following.
   i) Name the propounder of atomism in ancient Greek thoughts.
   ii) What is the contribution of Heracleitus in History of philosophy?
   iii) What is meant by Diletics by Socrates?
   iv) "An idea is the essence of a class" - Who has said this.
   v) 'Ethic is virtue" why had Socrates said so?
   vi) Is "universal" transcendent or immanent according to Artistotle?
   vii) What is an Efficient cause according to Aristotle.
   viii) What is the meaning of ontology?
   ix) State the names of two important pre-Socratic philosophers.
   x) What is the subject matter of philosophy?

[P.T.O.]

Group - 'B'

[16x 4]

Answer any FOUR questions.

2. State and explain some important characteristics of early Greek Philosophy.
3. What is the difference between Being and Becoming? Discuss after Heracleitus.
4. Explain the atomism of Democritus.
5. Discuss Socartes's theory of knowledge.
6. Give a brief account of Plato's theory of ideas.
7. Explain Aristotle's theory of causation.
8. How does Aristotle criticise Plato's theory of ideas? Explain.

■■■

No. of Pages: 2

GACR

+3, 3rd SEMESTER EXAMINATION-2018
(ARTS)

Sub: POL. SCIENCE Full Marks: 80

Paper: CORE-VI Time: 3 Hours

Answer the questions as per instruction.

The figure in the right hand margin indicate marks.

SECTION-A (Compulsory)

[2x8]

1. Answer any 8 of the following questions within two sentences each.

(a) What is Public Administration?

(b) What is Weber's theory of Bureaucracy called?

(c) What is Ecological Approach?

(d) What is New Public Administration?

(e) What is Good Governance?

(f) What is Public Service Delivery?

(g) Give an example of e-governance?

(h) What is Private Administration?

(i) What is gendering Public Administration?

(j) What is Human Relation Theory?

SECTION-B

Answer any FOUR of the followings. [16x4]

2. Define Public Administration? Discuss its significance in the age of Globalisation.

3. Critically analyse Taylor's theory of scientific management.

(P.T.O...)

4. Discuss the merits and demerits of Human Relation theory.

5. What is public policy? Discuss various approaches to it.

6. Discuss New Public Service approach & its growing importance in Public Administration today.

7. Good governance has became a word only. Discuss the failure of good governance today.

8. Women should be given more space in Public Administrations & the delivery of services should be more for Women -Analyse.

- x - x - x -

No. of Pages: 2

GACR

+3, 3rd SEMESTER END EXAMINATION-2018

(ARTS)

Sub.- History

PAPER : Core- VI

Time: 3 Hours Full Marks:80

The figure in the right hand margin indicate marks.

Question No.1 is compulsory, answer any FOUR from the rest.

1. Answer any EIGHT of the following. [2 x 8

   i) Write two important features of feudalism.

   ii) Mention two important works of Marx.

   iii) Who discovered America in which year?

   iv) Which French explorer planted a small colony in Quebec, Canada?

   v) Who founded Virginia?

   vi) What was the main economic activity of the Venetial nobles.

   vii) Briefly mention what is humanities.

   viii) Who was Leo-nardo-da-Vinci?

   ix) Who started reformation movement in Germany?

   x) Who discovered sea-route to India and when?

[P.T.O.]

Answer any FOUR questions. [16x 4]

2. What are the characteristics of feudalism? Explain how capitalism replaced it.
3. Briefly discuss how Europeans colonised America.
4. What are the causes and impact of Renaissance?
5. Briefly describe about the reformation movement in Germany?
6. Discuss about the emerging state system in Europe with special reference to England & France.
7. Briefly discuss the causes of shift of economic balance from the Mediteranean to Atlantic.
8. Discuss briefly about the commercial revolution.

■■■

No. of Pages: 3

GACR

+3, 3rd SEMESTER EXAMINATION-2018
(ARTS)

Sub: HINDI Full Marks: 80

Paper: CORE-VI Time: 3 Hours

Answer the questions as per instruction.
The figure in the right hand margin indicate marks.

१. निम्नलिखित किन्हीं आठ प्रश्नों के संक्षिप्त उत्तर दीजिए। [2x8]

(क) "कर्मभूमि" को छोडकर प्रेमचंद के दो उपन्यासों का नाम लिखिए।

(ख) प्रेमचंद युगीन हिंन्दी उपन्यास की समयसीमा का उल्लेख कीजिए।

(ग) दो तिलस्मी-ऐयारी उपन्यासकारों का नाम लिखिए।

(घ) चित्रलेखा के अलावा भगवती चरण वर्मा की दो उपन्यासों का नाम उल्लेख कीजिए।

(ङ) चित्रलेखा उपन्यास किस बर्ष प्रकाशन हुआ था?

(च) दो मनोविश्लेषण वादी उपन्यासकारों का नाम उल्लेख कीजिए।

(छ) नैना की मुख्य चारित्रिक विशेषता क्या है?

(ज) समरकांत में राष्ट्रभावना की झाँकी कहां मिलती है?

(झ) कुमार गिरी के पतन का क्या कारण है?

(ञ) श्वेतांग स्वामि भक्त है कैसे?

२. हिंन्दी उपन्यास के विकास मे प्रेमचंद के योगदान का उल्लेख कीजिए। [16]

अथवा

(P.T.O...)

(क) बिषय की दृष्टि से प्रेमचंद का उपन्यास जीवन यथार्थ के कितने निकट है लिखिए। [8x2]

(ख) प्रेमचंद के उपन्यासों मे चित्रित मेहनतकर वर्ग का वर्णन कीजिए।

३. प्रेमचंद एक यथार्यवादी कथाकार हैं- कर्मभूमी के आधार पर इस कथन की आलोचना कीजिए। [16]

अथवा

(क) कर्मभूमि की उद्देश्य की चर्च्चा कीजिए। [8x2]

(ख) कर्मभूमि की प्रमुख समस्याओं का उल्लेख कीजिए।

४. उपन्यासकार के रूप में भगवतीचरण वर्मा की विशेषताओं को उल्लेख कीजिए। [16]

अथवा

(क) पाप-पुण्य के बारे में रत्नाम्बर के विचार उल्लेख कीजिए। [8x2]

(ख) कुमारगिरी के चारित्रिक विशेषताओं को लिखिए।

५. कर्मभूमि उपन्यास के कथानक के आधार पर उसके नामकरण की सार्थकता पर विचार कीजिए। [16]

अथवा

(क) सुखदा का स्वतंत्रता संग्राम में क्या योगदान रहा। [8x2]

(ख) चित्रलेखा उपन्यास में मनुष्य को परिस्थितिओं का दास कहा गया है - समझाइए।

- x - x - x -

No. of Pages: 2

GACR

+3, 3rd SEMESTER EXAMINATION-2018
(ARTS)

Sub: ODIA Full Marks: 80

Paper: CORE-VI Time: 3 Hours

Answer the questions as per instruction.
The figure in the right hand margin indicate marks.

କ - ବିଭାଗ

୧. ୧୦ଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଗୋଟିଏ ବା ଦୁଇଟି ବାକ୍ୟରେ ଲେଖ । (୨×୧୦)

(କ) ଦ୍ରାବିଡ ଭାଷା କହିଲେ ସ୍ଥୂଳତଃ କେଉଁ କେଉଁ ଭାଷାକୁ ବୁଝାଏ ?

(ଖ) ଅମିନ, ଇଲାକା, ଦଲିଲ ଇତ୍ୟାଦି ଶବ୍ଦ କେଉଁ ଭାଷାରୁ ଗୃହୀତ ?

(ଗ) କେଉଁ ଭାଷା ପ୍ରଭାବରେ ପଶ୍ଚିମା ଳୀୟ ଓଡ଼ିଆ ବେଶୀ ପ୍ରଭାବିତ ?

(ଘ) 'ଅର୍ଦ୍ଦଳି' ଶବ୍ଦର ମୂଳ ଇଂରାଜୀ ଶବ୍ଦ କଣ ?

(ଙ) କେଉଁ ବିଦେଶୀ ଭାଷା ଦ୍ୱାରା ଓଡ଼ିଆ ଭାଷା ଅଧିକ ପ୍ରଭାବିତ ହୋଇଛି ?

(ଚ) ଆଗ୍ନେୟ, ଇଂରେଜ-ଏଇ ଶବ୍ଦ ଦୁଇଟିର ମୂଳ କେଉଁ ଭାଷାରେ ସନ୍ନିହିତ ?

(ଛ) ଚାରୋଟି ଅର୍ଦ୍ଧତତ୍ସମ ଶବ୍ଦର ଉଦାହରଣ ଦିଅ ।

(ଜ) ଅଷ୍ଟ୍ରିକ୍ ଭାଷା ବର୍ଗରୁ ଚାରୋଟିର ନାମ ଉଲ୍ଲେଖ କର ।

(ଝ) କର୍ମକାରକରେ କେଉଁ ବିଭକ୍ତି ହୁଏ ?

(ଞ) ବିଭକ୍ତିର ସଂଜ୍ଞା ଉଲ୍ଲେଖ କର ।

(ଟ) ସମାସରେ ବିଗ୍ରହବାକ୍ୟ କାହାକୁ କହନ୍ତି ?

(ଠ) ଯେକୌଣସି ୪ଟି ପ୍ରତ୍ୟୟ ସଂଯୋଗ କରି ୪ଟି ଶବ୍ଦ ଗଠନ କର ।

(P.T.O...)

ଖ- ବିଭାଗ
ଦୀର୍ଘ ଉତ୍ତର ମୂଳକ ପ୍ରଶ୍ନ

୨. ଓଡ଼ିଆ ଭାଷାରେ ଦ୍ରାବିଡ ଭାଷାର ପ୍ରଭାବ ଉଲ୍ଲେଖ କର (୧୨)

ଅଥବା

ଓଡ଼ିଆ ଭାଷାରେ ଯାବନିକ ଭାଷା ପ୍ରଭାବର କାରଣମାନ ସଦୃଷ୍ଟାନ୍ତ ଆଲୋଚନା କର।

୩. ଓଡ଼ିଆ ଭାଷାରେ ପ୍ରଚଳିତ ପର୍ତ୍ତୁଗୀଜ ଶବ୍ଦାବଳୀର ପରିଚୟ ଦିଅ। (୧୨)

ଅଥବା

ଓଡ଼ିଆ ଭାଷା ବିକାଶରେ ଇଂରାଜୀ ଭାଷାର ଭୂମିକା ନିର୍ଣ୍ଣୟ କର।

୪. ଓଡ଼ିଆ ଶବ୍ଦ ଭଣ୍ଡାରର ଶ୍ରେଣୀ ବିଭାଗ ଆଲୋଚନା କର। (୧୨)

ଅଥବା

ଓଡ଼ିଆ ଶବ୍ଦମାଳାରେ ସଂସ୍କୃତ ଭାଷାର ପ୍ରଭାବ ସମ୍ପର୍କରେ ଏକ ସାଧାରଣ ପରିଚୟ ଦିଅ।

୫. କାରକର ସଜ୍ଞା, ସ୍ୱରୂପ ଓ ପ୍ରକାର ଭେଦ ସଦୃଷ୍ଟାନ୍ତ ଆଲୋଚନା କର। (୧୨)

ଅଥବା

ବିଭକ୍ତିର ଶ୍ରେଣୀ ବିଭାଗ ଉଦାହରଣ ସହ ବୁଝାଇ ଦିଅ।

୬. 'ସମାସ'ର ସଜ୍ଞା ଉଲ୍ଲେଖ ସହ ତତ୍‌ପୁରୁଷ ସମାସର ପ୍ରକାର ଭେଦ ଆଲୋଚନା କର। (୧୨)

ଅଥବା

ବିଭିନ୍ନ ପ୍ରତ୍ୟୟ ସଂଯୋଗରେ କିଭଳି ଭାଷାର ପ୍ରକାଶ କ୍ଷମତା ବୃଦ୍ଧିପାଏ, ସଦୃଷ୍ଟାନ୍ତ ବର୍ଣ୍ଣନା କର।

- x - x - x -

No. of Pages: 2

GACR

+3, 3rd SEMESTER EXAMINATION-2018
(ARTS)
ENGLISH (Hons: C-VI)

Time: 3 Hours | Full Marks: 80

Answer the questions as per instruction.
The figure in the right hand margin indicate marks.

1. Answer any EIGHT of the following: [2x8]

(i) How does 19th century British literature present the impact of industrialization on society?

(ii) Why does prose grow in 19th century British literature?

(iii) What is the theme of "Old China"?

(iv) What is the theme of "A Few Thoughts on Sleep"?

(v) Who is Mary Shelley?

(vi) What is *Frankenstein* about?

(vii) Write the names of the novels written by Jane Austen?

(viii) How does *Mary Barton* describe slums?

(ix) What does Arnold mean by anarchy?

(x) What does Hazlitt say about the dramatic literature of the Age of Elizabeth?

Answer any FOUR of the following. [16 x 4]

2. Highlight the salient features of the Victorian Age in English literature.

3. Bring out the ideas of the writer in "On Going A Journey".

4. Analyze the theme of the essay "Walking Tours".

(P.T.O...)

5. Highlight the Gothic element in *Frankenstein.*

6. Sketch the character of Elizabeth Benneet.

7. Critically summarize Arnold's *Culture and Anarchy* (Chapter 1).

8. Answer any four of the following

   (a) What are the characteristics of the Victorian novel?

   (b) Write a short note on Lamb as an essayist.

   (c) Write a short note on Frankenstein.

   (d) What is the theme of Dr. Jekyll and Mr. Hyde?

   (e) Write a short note on the significance of the title Pride and Prejuice.

   (f) Write a short note on Arnold as a Victorian writer.

- x - x - x -

No. of Pages: 2

GACR

+3, 3rd SEMESTER EXAMINATION-2018
(ARTS)

Sub: EDUCATION Full Marks: 60

Paper: CORE-VI Time: 3 Hours

Answer the questions as per instruction.
The figure in the right hand margin indicate marks.

GROUP-A

1. Answer any SIX of the following questions. [2x6]

(i) Differentiate between aims & objectives of teaching.
(ii) Give an example of Local History.
(iii) Write any two aspects of national history.
(iv) Give an example of archaeological sources of history.
(v) Write one of the demerits of source method.
(vi) What is progressive time line?
(vii) Which Herbartian steps is just like preparing the soil for sowing the seeds?
(viii) Which 'E' of 5E model relates the learner directly with the problem?

GROUP-B

Answer any FOUR of the following questions.

2. Choose a topic of history from lower secondary level and state its objectives and show their specifications. [6+6]

OR

Explain with examples how history as a subject is related with other school subjects. [12]

(P.T.O...)

3. What is chronological approach? Compare it with regressive approach and bring out its merit and demerits. [4+4+4]

OR

The content of history at different stages should containa fair mixture of world, national and local history, why and on what principles? [12]

4. What is story telling method? How it can be utilised in class room teaching and practice? Discuss the merits and demerits of story telling method. [2+5+5]

OR

Choose a topic of history from lower secondary level and explain with examples how would you develop time and space sense in this lesson by drawing time line and maps. [6+6]

5. Discuss the importance of teaching learning materials in teaching history with concrete examples. [12]

OR

What are visual aids? Select any three aids suitable for teaaching history and describe how and when the same may be used in class room teaching. [4+4+4]

6. What is lesson planning? Prepare a short lesson plan on a topic in history selecting from secondary level by following herbartian approach. [12]

OR

What are the advantages of lesson planning? Prepare a lesson plan on a topic in history selcting from secondary level by following 5E model. [12]

- x - x - x -

No. of Pages: 2

GACR

+3, 3rd SEMESTER EXAMINATION-2018
(ARTS)
ECONOMICS (CORE -VI)

Time: 3 Hours | Full Marks: 80

Answer the questions as per instruction.
The figure in the right hand margin indicate marks.

GROUP-A

[2x8]

1. Answer any EIGHT of the following questions within 2to3 sentences in each case.

(a) What is meant by Consumption function?

(b) How is MPC different from APC?

(c) What do you mean by inventory investment?

(d) What is rate of interest?

(e) Define Liquidity trap.

(f) Why is curve sloped downward?

(g) Define Money multiplier.

(h) What is Aggregate supply?

(i) Give the meaning of Trade cycle?

(j) What do you mean by Rational Expectations.

GROUP-B

Answer any FOUR of the following questions. [16 x 4]

2. Explain the Keynesian psychoological law of consumption and point out its limitations.

3. Discuss the Permanent income hypothesis of consumption function.

(P.T.O...)

4. Distinguish between induced investment and autonomous investment and explain their determinants.

5. Define MEC. How does the interrelationship between MEC and rate of interest influence investment decision?

6. Discuss the Keynesian approaches for supply of money. How is it different from classical approach?

7. How do we obtain the equilibrium of the economy with the help of IS and LM curves? Is this equilibrium stable?

8. Explain Hayek's over-investment theory of trade cycle.

- x - x - x -

No. of Pages: 2

GACR

+3, 3rd SEMESTER EXAMINATION-2018
(SCIENCE)

Sub: ZOOLOGY Full Marks: 60

Paper: CORE-VI Time: 3 Hours

Answer the questions as per instruction.
The figure in the right hand margin indicate marks.
Draw labelled diagram wherever required.

GROUP - A

[2x6]

1. Answer any SIX of the following.

(i) To which group of muscle Cardiac muscle belong and why?

(ii) Name the cells that give rise to osteocytes. Where are they present?

(iii) Which structure of Skeletal muscle stores Ca^{++}? When it releases these ions.

(iv) What is monosynaptic reflex arc? Name its components.

(v) What is puberty? mention the characters that appear at male puberty.

(vi) Mention the names of hormones secreted from pars nervosa. Where are they synthesised?

(vii) What is placenta? Name the hormones secreted from it.

(viii) Name the hormones secreted by ovary and mention their chief roes.

(P.T.O...)

GROUP-B

Answer any FOUR of the following. [12x4]

2. What is tissue? Discuss blood as a connective tissue.
3. Write notes on **any two** of the following:
   (a) Histology of compact bone
   (b) Glands
   (c) Synaptic transmission
4. What is reflex action? Discuss its type and add a note on reflex arc.
5. Give a detailed account of the molecular and chemical basis of muscle contraction.
6. Discuss the historlogical details of the mammalian testis and ovary.
7. Describe the structure and function of the thyroid of any mammal.
8. Write notes on **any two** of the following.
   (a) Endocrine pancreas
   (b) Spermiogenesis
   (c) Muscle twitch

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No. of Pages: 2

GACR

+3, 3rd SEMESTER EXAMINATION-2018
(SCIENCE)

Sub: BOTANY Full Marks: 60

Paper: CORE-VI Time: 3 Hours

Answer the questions as per instruction.
The figure in the right hand margin indicate marks.

GROUP - A

1. Write short notes on any SIX of the following. Each in 3 to 5 sentences. [2x6]

(a) M.I. Vavilov

(b) Molasses

(c) Cinchona

(d) Crop domestication

(e) Saffron

(f) Starch

(g) Plant Introduction

(h) Scientific name & family of coconut.

GROUP-B

Answer any FOUR questions.

2. What do you mean by Germplasm? Discuss its importance and conservation. [12]

3. Give an account of origin, morphology, processing and uses of rice. [12]

4. Give a general account on legumes and their importance to man and ecosystem. [12]

(P.T.O...)

5. Discuss the morphology, processing uses and health hazards of tobacco. [12]

6. What are essential oils? Give a general account and methods of extraction of essential oils. [12]

7. Write notes on: [6x2]

   (a) Para rubber

   (b) Spices

8. Give botanical name, family and uses of: [3x4]

   (a) Tea

   (b) Cannabis

   (c) Jute

   (d) Brassica

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No. of Pages: 3

GACR

+3, 3rd SEMESTER END EXAMINATION-2018
(COMMERCE)

Sub.- IT Law and Practice

PAPER : Core - VI

Time: 3 Hours | Full Marks: 80

The figure in the right hand margin indicate marks.

Question No.1 is compulsory, answer any FOUR from the rest.

1. Answer any EIGHT of the following. [2 x 8

a) Assessment year

b) Assessee-in-default

c) Short-term Capital gain

d) Alternative minimum tax

e) Reognize provident fund

f) Perquisites

g) Deferred tax

h) Tax refund

i) Annual value of house property

j) Form 16

Answer any FOUR questions.

2. Discuss the residential status of an individual and a firm under Indian income Tax Act, 1961. [16

3 Discuss the provisions of Income-Tax Act, 1961 relating of E-filling of return of income. [16

P.T.O.

4. From the following particulars, find out the taxable salary of Mrs. Babita working at Coimbatore. [Population 11 Lakhs.

a) Salary Rs. 12, 000 p.m.

b) DQ@100% of Salary

c) Employer's contribution of Employee's provident fund (Recognised) - 14% of basic salary

d) Rent-free accommodation (unfurnished) Fair rental value Rs. 80,000 p.a. Maintenance expenses of garden met by employer Rs. 3,000.

e) Interest on provident fund balance @13% p.a. – Rs. 3,900.

f) A car (1.4H capacity) is provided by employer. All expenses are borne by employer. It is used both for office & personal purpose. Car was used by employee for only 11 months during the year .

g) She paid professional tax of Rs. 200.

h) She received Rs. 500 p.m. as fixed medical allowance.

5. Mr. Mohanty is the owner of two houses at Bhubaneswar. Find out the taxable Income from houses from the details given below.

Particulars	House No.1	House No. 2
Usage	Let out	Self-occupied
Municipal Value	Rs. 1,50,000	Rs. 2,00,000
Fair rent	Rs 1,48,000	Rs. 2,10,000
Standard rent	Rs. 1,52,000	-----
Rent Receivable	Rs. 1,60,000	-----
Local Tax paid by owner	10%	10%
Interest on Loan for repair	Rs. 30,000	Rs. 60,000

6. Mr. Martin a resident individual, sold his residential house property on 8.6.2017 for Rs.70,00, 000 which was purchased by him for Rs. 20, 50,000 on 5.5.2006. He paid Rs. 1,00,000 as brokerage for the sale of said property. The stamp duty valuation assessed by sub-registrar was Rs. 80,000. He bought another house property on 25-12-2017 for Rs. 15,00,000. He deposited Rs. 5,00,000 on 10-11-2017 in the capital gain bond. Compute income under the head capital gains for the assessment year 2018-19 as per income-tax act, 1961.
Cost inflation index for F.Y 2006-07: 122 and 2107-18: 272.

7. Explain the provisions relating to set-off and carry forward and set-off different kinds of losses under income-tax act.

8. Mention the different kinds of incomes specifically mentioned as chargable to tax under the head 'Income from other Sources".

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No. of Pages: 3

GACR

+3, 3rd SEMESTER END EXAMINATION-2018

(SCIENCE)

Sub.- ETC

PAPER : C - VI

Time: 3 Hours | Full Marks:60

The figure in the right hand margin indicate marks.

Question No.1 is compulsory, answer any FOUR from the rest.

1. Answer any SIX of the following. [2x6]

   a) What is under damped of R-L-C circuit

   b) What do you mean by phase lead and phase log?

   c) Define DC response. How it is different from AC response?

   d) What is the significance of transient analysis of electrical circuit?

   e) Differentiate L-network and T-network.

   f) What is phase value of current? Relate phase value and line value of current.

   g) What do you mean by network analysis? What are the different techniques to analyse network?

   h) Differentiate Thevenin's theorem and Norton's theorem.

   Answer any FOUR questions.

2. a) Derive the expression for balanced star connected load and draw the phasor diagram. [6]

[P.T.O.]

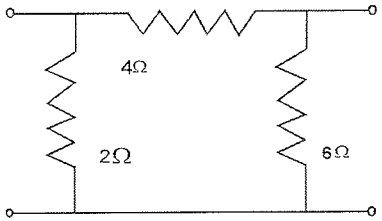
b) Describe three phase power measurement by two watt meter method for delta connected load and determine the power equation and phasor diagram. [6

3. a) Draw DC response of R-L-C circuit and derive equation for critically damped and over damped. [6

b) Write short notes on transient analysis.

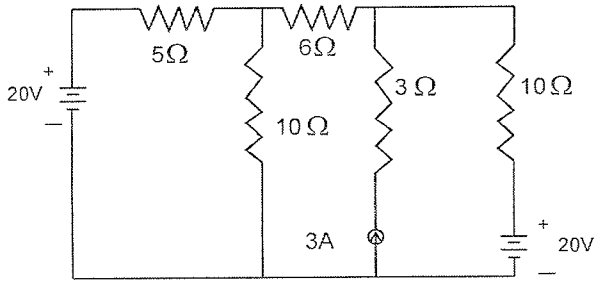
4. (a) What do you mean by differentiator circuit? Write the application of differentiator. Show that the O/P from a differentiating circuit is derivative of I/P. [6

(b) Find the z parameter for the following circuit:

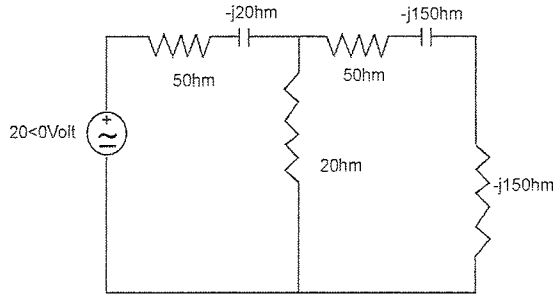


5. a) Write down steps involved in Thevenin's Theorem.

b) Find the voltage across 6Ω resiter using superposition theorem.



6. (a) Apply mesh current analysis method and determine current through the resistor of the network shown below. [10



(b) State and explain Kirchoff's current law. [2

7. a) Describe the transformation of star-delta and delta-star. [6

b) Write down different steps of Millman's theorem [6

8. Write short notes on any TWO. [6 x 2

a) π Network

b) Maximum-Power transfer theorem.

c) h- parameter of two port network.

d) Passive filter

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No. of Pages: 3

GACR

+3, 3rd SEMESTER END EXAMINATION-2018
(SCIENCE)

Sub.- COMPUTER SCIENCE

PAPER : Core - VI

Time: 3 Hours | Full Marks: 60

The figure in the right hand margin indicate marks.

Question No.1 is compulsory, answer any FOUR from the rest.

Section - 'A'

[2 x 6

1. Answer any SIX of the following.

a) Define different types of attributes.

b) Describe difference between super key, primary key and candidate key.

c) What is update anomaly?

d) Define starvation.

e) Define Functional Dependency.

f) What is the difference between specification and generalisation?

g) What schedule, serial schedule and serializable schedule ?

h) What is Hashing?

Section - 'B'

2. a) Define DBMS. Describe its components. Describe the advantages and disadvantages of DBMS.

P.T.O.

b) Give detailed view on different database users describing their relation with the database.

3. a) What is relational Algebra? Explain all set oriented operations with suitable examples.

b) Design an E-R diagram for airline reservation systems consisting of flights, aircrafts, airports, fares, reservation tickets, pilot, crew and passengers. Clearly highlight the entities, the relationships, the primary keys and mapping constraints.

4. a) What is Normalisation? Why is it required? Considering the following find whether the relation is in 3NF or not, if so justify your answer.

Relation	:	R(A,B,C,D)
Primary Key	:	A
FDs	:	$A \rightarrow B,C,$
		$A \rightarrow D$

b) Define the following SQL commands with syntax and examples.

INSERT, DELETE, UPDATE, SELECT, ALTER

5. a) Discuss B-Tree with its characteristics, Give a suitable example to demonstrate.

b) Briefly describe the index structure of a file. Describe its types with data read/write mechanisms.

6. a) Define Transanction and describe ACID properties briefly.

b) Describe Lost Update Problem, Inconsistent Read Problem and Dirty Read Problem.

7. a) Describe the 3-schema architecture. Why mapping is needed between schema levels?

b) Differentiate Sequential, Index-Sequential and Direct Access file organisations.

8. Write short notes (any THREE)

a) Concurrency Control

b) Database Language

c) Serializability

d) Heap file

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No. of Pages: 3

GACR

+3, 3rd SEMESTER END EXAMINATION-2018
(SCIENCE)

Sub.- Group Theory (Algebra -II) (MTC)
PAPER : Core - VI

Time: 3 Hours | Full Marks:80

The figure in the right hand margin indicate marks.

Question No.1 is compulsory, answer any FOUR from the rest.

1. Answer any EIGHT of the following. [2x8]

   a) Set of Natural number is not a group with respect to the binary operation multiplication due to which condition?

   b) Distinguish between semigroup & monoid.

   c) Define cyclic group with illustration.

   d) Give an example of group and its subgroup satisfying Lagrange's theorem.

   e) Define normal subgroup with suitable example.

   f) Define factor group.

   g) Under what condition a homomorphism will be an isomerphism. Justify.

   h) State forst isomorphism theorem.

   i) If G is a finite group and $a \in G$ then prove that $a^{0(G)} = e$, where e = identity element.

   j) How do you find the order of a given permutation.

[P.T.O.]

2 a) Prove that identity and inverse elements of a group are unique. [8

b) State and prove left and right cancellation laws for the elements of a group. [8

3. a) Prove that there is a one-to-one correspondence between any two right cosets of a subgroup H in G. [8

b) If G is a finite group whose order is a prime number p, then prove that G is a cyclic group. [8

4. a) If H and K are finite subgroup of G of order 0(H) and 0(K) respectively then prove that

$$O(HK) = \frac{O(H)O(K)}{O(H \cap K)}$$ where O(G) = order of G. [8

b) Prove that a subgroup N of G is a normal subgroup of G if and only if the product of two right cosets of N in G is again a right coset of N in G. [8

5. a) Prove that every permutation is the product of its cycles. [8

b) Find the orbits and cycles of the permutations.

i) $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 \\ 2 & 3 & 4 & 5 & 1 & 6 & 7 & 9 & 8 \end{pmatrix}$ [4+4

ii) $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 6 & 5 & 4 & 3 & 1 & 2 \end{pmatrix}$

6. a) If G is a finite group and N is a normal subgroup of G then prove that O(G/N) = O(G)/O(N) [8

b) State and prove Cauchy's theorem for abelian group. [8

7. a) If ϕ be a homomerphism of G on to $\overline{G}$ with Kernel K. Then prove that G/K $\approx \overline{G}$. [8

b) Let G be any group , and g is a fixed element of G and $\phi : G \to G$ defined as $\phi(x) = gxg^{-1}$. Prove that ϕ is an isomorphism of G on to G. [8

8. a) Prove that the centre of a group is always a normal subgroup. [8

b) If G is a abelian group and N is any sub-group of G, then prove that G/N is abelian. [8

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No. of Pages: 3

GACR

+3, 3rd SEMESTER EXAMINATION-2018

(SCIENCE)

Sub: CHEMISTRY Full Marks: 60

Paper: CORE-VI Time: 3 Hours

Answer the questions as per instruction.

The figure in the right hand margin indicate marks.

Group -A (Compulsory)

1. Answer any SIX questions. [2x6]

(a) Explain why allyl chloride is more reactive than vinyl chloride?

(b) How will you distinguish between chlorobenzene and benzyl chloride?

(c) Write the structural formulae and IUPAC names for all isomeric alcohols of molecular formula $C_4H_{10}O$.

(d) What is the order of acidic strength in phenol, p-Cresoll and P-nitrophenol and why?

(e) What is Fehling solution? How it reacts with acetaldehyde?

(f) Convert ethylene to propanoic acid.

(g) What are active methyl compound. Give two examples of them.

(h) Explain Why boiling point of butann-1-ol is higher than butane-1-thiol.

GROUP - B

Answer any FOUR questions. [12x4]

2. (a) Write the mechanism and stereo chemistry of SN^2 reaction. [4]

(P.T.O...)

(b) What happens when (i) 2-bromopropaene is trated with alcoholic KOH (ii) chloro benzene is heated with nitrating mixure. [4]

(c) Explain why chloro benzene is less reactive than Ethyl chloride. [4]

3. (a) How could you distinguish betweeen primary, secondary and tertiary alcohol by victor Mayer's method? [6]

(b) How primary secondary and tertiary alcohols can be prepared from Grignard's reagent, explain with mechanism? [6]

4. Explain the following reactions with mechanism [4x3]

(a) Reimer-Tiemann reaction (b) Kolbe reaction
(c) Fries rearrangement

5. (a) How diethyl ether can be prepared from ethyl alcohol and ethyl bromide. What happens when diethyl ether reacts with PCl_5 and acetyl chloride? [4x2]

(b) Write two methods how Oxirane can be prepared from ethane. [4]

6 (a) Compound (A), $C_5H_{12}O$, does not give a precipitate with phenyl hydrazine. Oxidation of A with acidified potassium dichromate gives (B), $C_5H_{10}O$. Compound B reacts with phenyl hydrazine but not give Tollen's reagent test. The original compound (A) can be dehydrated with sulphuric acid to give a hydrocarbon (C), C_5H_{10}. Ozonolysis of the hydrocarbon (C) gives acetone and acetaldehyde. Deduce the structure of (A), (B) and (C) with explanation. [8]

(b) Write a note on cross Aldol condensation. [4]

7. (a) Discuss the following reactions with mechanism. [4x2]

(i) Carboxylic acid with thionyl chloride

(ii) esterification

(b) What happens when ethane thiol treated with [4]

(a) H_2O_2 (b) Conc, HNO_3

8. (a) Write any two method of preparation of Acetoacetic ester. How diethyl acetic acid and succinic acid can be synthesized from ethyl aceto acetate. [8]

(b) How carboxylic acid and alkanes can be synthesized from Grignard's reagent. [4]

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No. of Pages: 3

GACR

+3, 3rd SEMESTER END EXAMINATION-2018

(SCIENCE)

Sub.- PHYSICS

PAPER : Core-VI

Time: 3 Hours | Full Marks: 60

The figure in the right hand margin indicate marks.

Question No.1 is compulsory, answer any FOUR from the rest.

Group - 'A'

[2 x 6

1. Answer any SIX of the following.

a) State Zeroth law of thermodynamics.

b) What is the amount of work done by one mole of diatomic gases when expanded adiabatically from tempt 300K to 500K. Given R =8.3 J/K. mol.

c) What is net change in entropy in a reversible cyclic process?

d) State third law of thermodynamics.

e) Calculate change in entropy of 1g of H_2O at 100°C converted into steam at 100°C . Given that Lv of steam = 540 cal/g.

f) What is 2nd order phase transition? Give an example of it.

g) Write down expression for compresibility at const tempt.

h) At what tempt. will the average speed of hydrogen gas molecules be double the average speed of oxygen at 300K?

P.T.O.

i) What does the following represent ?

$$z = \frac{Pv}{nRT}$$

Group 'B'

Answer any FOUR.

2. a) Differentiate a heat engine and Refrigerator. What is the relation between efficiency (η) of heat engine and coefficient of performance (β) of refrigerator? [4+4]

   b) The source tempt of carnot's engine is 127^0 C. It takes 500 calorie of heat from source and rejects 400 calorie of heat to sink during each cycle. Calculate the tempt.of sink. [4]

3. a) Starting from entropy for one mole gas device an expression for change in entropy $ds = \frac{dq}{T}$ [4]

   b) Derive the expression entropy of a perfect gas. What is its value at constant pressure? [6+2]

4. a) Represent carnot's cycle on a temperature entropy diagram. Locate the areas representing heat absorbed from source and heat rejected into sink. [4+4]

   b) Write the significance of S-T diagram. [4]

5. a) Define and explain internal energy, Enthalpy, Helmhotz free Energy and Gibb's free energy. [2x 4]

   b) Show that $\left(\frac{\partial Cp}{\partial p}\right)_T = -T\left(\frac{\partial^2 v}{\partial T^2}\right)_p$ [4]

6. Explain Ehrentest's equation as second order phase transition. [12]

7. a) What are transport phenomenon? Discuss transport of momentum. [6+2]

   b) On the basis of kinetic theory deduce an expression for the viscosity of a gas in terms of mean free path of its molecules. How does it depends on pressure and temperature?

8. a) Define critical constants from vanderwall's equation of state and obtain the expression for critical temperature, pressure and volume. [8]

   b) What is the reduced equation of state? [4]

No. of Pages: 3

GACR

+3, 3rd SEMESTER EXAMINATION-2018
(SCIENCE)

Sub: STATISTICS Full Marks: 60

Paper: CORE-VI Time: 3 Hours

Answer the questions as per instruction.

The figure in the right hand margin indicate marks.

1. Answer any SIX questions.

(a) Define sampling distribution. Give an example.

(b) Define parameter and statistic.

(c) What do you mean by level of significance and test of significance.

(d) F distribution extends along abscissa from _____ to _____.

(e) Mode of F-distribution is always _____ unity.

(f) A computer works with _____ and _____.

(g) _____ keys are used for moving through the documents.

(h) Microsoft word is an _____ software.

Answer any FOUR of the following.

2. (a) Prove that the mean and standard error, when samples of the size 'n' drawn from a population having mean Γ and S.D. δ are given by [12]

mean of $\bar{x} = E(\bar{x}) = \Gamma$ and S.E of $\bar{x} = \frac{\delta}{\sqrt{n}}$.

(b) The following observations constitute a random sample from an unknown population. Estimate the mean and S.D. of the population. Also find the estimate of S.E. of sample mean: 14, 19, 17, 20, 25.

(P.T.O...)

3. (a) An observation of 40 samples had a mean of 113.5 with a variance of 36. Using 5% significance level, can we conclude that the mean of the variable is 115.5? [12]

   (b) A researcher wanted to know whether there is any significant difference in the monthly sales drawn by software engineer and hardware engineer in his city. His observations are tabulated as under:

	Hardware Engineer	Software Engineer
Mean Salary (Rs000):	50	60
SD :	10	15
Sample Six :	80	100

   What is your conclusion? Use 5% significance level.

4. (a) Derive mode and skewness of Chi-square distribution. [12]

   (b) What do you mean by yate correction method? Explain applications of Chi-square test.

5. (a) Write short notes on student 't' distribution and point out its uses. [12]

   (b) Explain stating clearly the assumptions involved, the *t* test for testing the significance of the difference between the two sample means.

6. (a) Show that mode of '*F*' distribution with $r_1(\geq 2)$, r_2 d.f. is given by $\frac{r_2(r_1-2)}{r_1(r_1+2)}$ and always less than one. [12]

   (b) Explain application of '*F*' test. [12]

7. Write short notes on any Three.

   (a) Operating system
   (b) Magnetic and optical disks.

   (c) Display Device
   (d) Types of software

8. (a) What do you mean by word processor? Explain its features and uses. [12]

   (b) What are the basics of ward processing. Distinguish between MS Word and MS Office.

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No. of Pages: 3

GACR

+3, 3rd SEMESTER END EXAMINATION-2018

(SCIENCE)

Sub.- MATH

PAPER : Core-VI

Time: 3 Hours | Full Marks:80

The figure in the right hand margin indicate marks.

Question No.1 is compulsory, answer any FOUR from the rest.

[2x8]

1. Answer any EIGHT of the following.
   a) Distinguish between semigroup and monoid.
   b) Define cyclic group with example.
   c) Prove that identity element of a group is unique.
   d) Under what condition set of 2x2 matrices $\begin{pmatrix} a & b \\ c & d \end{pmatrix}$ will satisfy inverse condition.
   e) Define permutation group with example.
   f) Prove that a group of order 9 is abelian.
   g) Define centre of a group and find the centre of group of integers mod 8.
   h) How do you find the order of a given permutation?
   i) State group homomorphism with example.
   j) Define factor group with example

Answer any FOUR questions.

2. a) If G={1, −1, i, −i} is a group under multiplication. Then verify it is cyclic or not? Find the order of each element and its generator. [8]

[P.T.O.]

b) Prove that of every element of the group G is its own inverse, then G is abelian. [8]

3. a) If H is a nonempty finite subject of a group G and H is closed under multiplication. The prove that H is a subgroup of G . [8]

b) State and prove Euter corollary. [8]

4. a) If H & K are subgroup of G then prove that H K is a subgroup of G if and only if H K = K H. [8]

b) Prove that the subgroup N of G is a normal subgroup of G if and only if every left coset of N in G is a right coset of N in G. [8]

5. a) State and prove Cauchy's theorem for abelian group. [8]

b) Find the inverse of the permutations

$$\begin{pmatrix} 1\ 2\ 3\ 4\ 5\ 6\ 7 \\ 2\ 3\ 1\ 5\ 4\ 7\ 6 \end{pmatrix}$$ [8]

6. a) If $\phi : G \to \overline{G}$ is a group homomerphism then prove that Ker (ϕ) is a normal subgroup of G. [8]

b) State and prove Fermat's Little theorem. [8]

7. a) Determine which of the following are even permutation [8]

i) (1, 2, 3, 4, 5), (1, 2, 3) (4, 5)

ii) (1, 2) (1, 3) (1, 4) (2, 5)

b) If $0(G)=p^2$, where p is a prime number, then prove that G is abelian.

8. a) If A and B are groups, then prove that A x B is isomorphic to B x A. [8]

b) Prove that every finite abelian group is the direct product of cyclic groups. [8]

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