

GACR
PG 3rd SEMESTER EXAMINATION - 2018
(SCIENCE)
Zoology - 303

Time : 4Hours

Full Marks : 60

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks

Group - A Compulsory

1. Answer any Six of the following : (2x6)
- (a) What is neural crest cells? How do they originate?
 - (b) Describe the divisions and ultra-structure of human sperm.
 - (c) What is insulin pathway control of ageing?
 - (d) Describe the process of Spatial Gene Expression during development.
 - (e) What is embryonic stem cell? Describe its therapeutic uses.
 - (f) Describe the agents of teratogenesis and their impact.
 - (g) Describe the various media used in animal tissue culture.
 - (h) What are the principle and procedure of cryopreservation?

Group - B

Answer any **Four** of the following :

2. What is fertilization? Describe the biochemical aspects of fertilization. (12)

(2)

3. Describe the applications of development biology in medicine. Add a note on its chronology. (12)
4. Give an account of genetical disorders in human beings with their remedies. (12)
5. What is tissue disaggregation? Describe the various techniques with special emphasis on the role of enzymes. (12)
6. What is embryonic induction? Describe in details the characteristics, types and mechanism of embryonic induction. (12)
7. Describe the various morphogenetic activities of cells during neurulation. (12)
8. Write notes on any Three of the following : (12)
 - (a) Graafian follicle
 - (b) Apoptosis and its role in development
 - (c) Inborn errors in translation
 - (d) Design and layout of culture room
 - (e) Mitochondrial control of ageing

- x - x - x -

GACR
PG 3rd SEMESTER EXAMINATION - 2018
(SCIENCE)

SUBJECT : PHYSICS
PAPER : PH - 303

Full Marks : 60
Time : 4 Hours

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks

Section - A (Compulsory)

1. Answer any Six of the following Questions : (2x6=12)
- (a) Write the Maxwell's equation in differential and integral form.
 - (b) What are Gauge transformations? Explain.
 - (c) State equation of continuity and explain how this relation describes the conservation of charge.
 - (d) Define skin depth.
 - (e) Distinguish linearly and circularly polarized light.
 - (f) Schematically explain the anomalous dispersion and resonant absorption in a dielectric.
 - (g) Define Raleigh scattering. Why is the sky blue during the day and red during sunset?
 - (h) Explain diode radiation.

Section - B

Answer any **FOUR** of the following questions :

2. (a) State and explain Poynting's theorem. (9)
- (b) Determine the energy, Poynting vector and momentum of em waves in a vacuum. (3)

(2)

3. Starting from Maxwell's equation in electrostatics derive the wave equation for potential in source free region. (12)
4. (a) Discuss the behavior of EM waves in a conductor. Obtain the expression that describes the magnetic field lags behind the electric field. Explain why excellent conductors make good mirrors. (12)
5. (a) Write the Maxwell's equation, energy density and Poynting vector of EM waves in a linear dielectric medium. Write the electrostatics boundary conditions equations that relate the electric and magnetic fields at the interface between two linear media. Using this calculate the Reflection and Transmission coefficients for EM waves incident normally at a linear dielectric medium and from this confirm that $R + T = 1$. (2+2+8)
6. Discuss the frequency dispersion characteristics of dielectrics, conductors and plasmas using the oscillator model. (12)
7. Write short notes on (8+4)
(a) Maxwell's stress tensor,
(b) Polarization of electromagnetic waves.
8. Determine that the total power radiated by an oscillating electric dipole is directly proportional to the fourth power of its frequency of oscillation. (12)



GACR
PG 3rd SEMESTER EXAMINATION - 2018
(SCIENCE)

SUBJECT : CHEMISTRY
 PAPER : 303

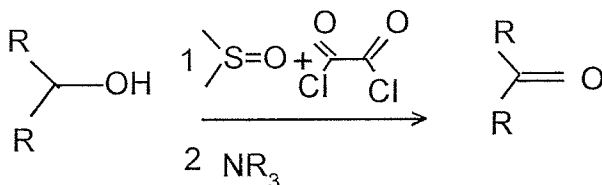
Full Marks : 60
 Time : 3 Hours

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks

SECTION - A (Compulsory)

1. Answer any **SIX** Questions : (2x6)

(a)



What is the name of the above reaction? Write the advantage of this reaction.

(b) Write the product of the following reaction:



(c) $\text{H}_2\text{C}=\text{CH}_2 + \rightarrow 6 \text{C}_2\text{H}_4\text{O} + \text{CO}_2 + 2 \text{H}_2\text{O}$. Fill up the gap and balance the equation.

(d) Why ketones are less reactive than aldehydes towards reduction.

(e) Write the two basic requirements for cis-trans isomerism.

(f) Explain chiral auxiliary with a suitable example.

(g) Write the synthesis of oxirane by peroxy acid epoxidation.

(h) Write the important application of organo silicon compounds.

P.T.O.

SECTION - BAnswer any **FOUR** Questions :

2. (a) Write down the Dess-Martin Oxidation reaction. Give its mechanism. What is the significance of this reaction? (6)
- (b) Give the mechanism of Wolff-Kishner Reduction? (6)
3. (a) How the reduction of alkanes and alkenes can be undertaken? Give the reaction with mechanism. (6)
- (b) Write two examples of oxidation of any organic compounds by ruthenium tetra oxide. (6)
4. (a) Differentiate between Norish type-I and Norish type-II reactions? (6)
- (b) Give one catalyst controlled reaction. Explain with example how the reaction is controlled by the catalyst. (6)
5. (a) What is Cycloaddition reaction. Write the principle and mechanism of the reaction. (6)
- (b) Write the synthesis of Benzofuran. (6)
6. (a) How indole is synthesized? Give the mechanism of the reaction. (6)
- (b) Why Skraup synthesis. Give its important application. (6)
7. (a) Write short notes on - (6)
- (i) Luche reduction
- (ii) Enantiomers
- (b) Write as directed for the followings. (6)
- (i) Derivation of Vitamin C from sugar
- (ii) Primary metabolism
8. (a) Write the importance of organo magnesium compounds in organic synthesis. (6)
- (b) Write the two important uses of Cu and Ni in organic synthesis. (6)



GACR
PG 3rd SEMESTER EXAMINATION - 2018
(SCIENCE)

SUBJECT : BOTANY
PAPER : 303

Full Marks : 60
Time : 4 Hours

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks
(Provide diagram where ever necessary)

Group - A

1. Answer any **SIX** of the following : (2x6)
- (a) Write two features of ICBN.
 - (b) Write the features of herbariums sheet.
 - (c) What is cladistics?
 - (d) Write two phytochemical features used in taxonomical process.
 - (e) Write two floral characters of Romales.
 - (f) Write the name of two orchid flowers.
 - (g) Name two Indian Mycologists.
 - (h) What is heterothallism?

Group - B

Answer any Four of the following :

2. Describe the Bentham & Hookers system of classification. Write down its merits and demerits. (12)
3. Discuss the use of cladistics in classification of Plants Molecular taxonomy. (12)

P.T.O.

(2)

4. Describe the range of floral structures in Orchidales. (12)
5. Discuss the degeneration of sex in fungi. (12)
6. Describe the disease symptoms, modes of infection and defense mechanisms in plants and control of plant diseases. (12)
7. Discuss the APG system of classification and write down its merits and demerits. (12)
8. Discuss the range of floral structure of Ranales. (12)



GACR
PG 3rd SEMESTER EXAMINATION - 2018
(ARTS)

SUBJECT : PSYCHOLOGY
PAPER : 303

Full Marks : 60
Time : 4 Hours

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

Group - A (Compulsory)

1. Attempt any SIX of the following :

(2x6)

- (a) What is health Psychology? (Two imp. definition)
- (b) Two important goals of health psychology.
- (c) Write one dimension of bio-psychological model.
- (d) What is GAS2 ?
- (e) Explain negative selftalk.
- (f) What is health promotion?
- (g) Explain tend and be friend?
- (h) Write important Psychosomatic medicines.

Group - B

Answer any FOUR of the following :

2. Discuss health Psychology as an inter disciplinary field. (12)
3. Briefly describe various health belief models. (12)
4. Critically analyse various causes of stress. (12)

(2)

5. Write notes on : (6)
- (a) Stress as a silent killer. (6)
 - (b) Coping strategies of stress. (6)
6. Wellbeing and illness are closely related, Discuss. (12)
7. Describe various approaches to health promotion with evaluation. (12)
8. Write notes on : (6)
- (a) Changing pattern of illness (6)
 - (b) Changing health habits. (6)

-X-X-X-

GACR
PG 3rd SEMESTER EXAMINATION - 2018
(ARTS)
SOCIOLOGY (303)

Time : 4 Hours

Full Marks : 80

*Answer all Questions as per the instruction
The figure in the right hand margin indicate marks.
Q.no. 1 is compulsory. Answer any FOUR from rest.*

Group - A (Compulsory)

1. Answer any **Eight** of the following questions : (2x8)

- (a) What do you mean by economic growth?
 - (b) What is sustainable development?
 - (c) What is the concept of "Soft State"?
 - (d) Define civil society.
 - (e) What do you mean by gender inequality?
 - (f) What is human resource development?
 - (g) What is colonialism?
 - (h) What is globalization?
 - (i) What is modernization?
 - (j) What are the main purposes of NGOs (Non-Governmental Organization).
- (16x4)

Group - B

Answer any **Four** of the following :

2. What is social development? Discuss its different dimensions.

(2)

3. Critically evaluate various aspects of dependency development theory.
4. Critically analyse the Marxist approaches to development.
5. Discuss the role of multinationals in the third world countries.
6. Write a Sociological essay on “Gender and development”.
7. Sociologically focus on the topic “Ecology and sustainability.”
8. Discuss the Origin, growth and role of civil societies in India.

- x - x - x -

GACR
PG 3rd SEMESTER EXAMINATION - 2018
(COMMERCE)
ORGANISATION BEHAVIOUR
(MCO - 303)

Time : 3 Hours

Full Marks : 80

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks.
Q.no. 1 is compulsory. Answer any FOUR from rest.

1. Answer any **EIGHT** of the following : (2x8)
- (i) Define organizational Behaviour.
 - (ii) What are the main components of attitude?
 - (iii) Define personality.
 - (iv) What is perception?
 - (v) Define motivation.
 - (vi) What are formal and informal groups?
 - (vii) What is charismatic leadership?
 - (viii) What do you mean by grape vine?
 - (ix) What do you mean by filtering?
 - (x) Define organisation Development.
2. What is organisational behaviour? Bring out the significance of organisational behaviour. (16)

OR

What is learning? Explain the major theories of learning.

3. Define group. What are the five stages of group development. (16)

P.T.O.

(2)

OR

Explain Herzberg's two factor theory and differentiate it from Maslow's Need theory.

4. Explain the different styles of leadership. (16)

OR

Discuss the Fiedler's contingency theory in detail.

5. Describe the various barriers to communication. What measures would you suggest to overcome them? (16)

OR

Explain in detail the various sources of stress specifically related to organisational environment.

6. What is the concept of organisational conflict? Are organisational conflict always dysfunctional? Explain fully. (16)

OR

What are the four main approaches to managing organisation change? Explain briefly.

- x - x - x -

No. of Pages: 2

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

Sub.- Pol. Science
PAPER : P-303

Time: 4 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

[2 x 8

1. Answer any EIGHT of the following :-
- a) What is *Panchasheel* Principle ?
 - b) What is Bandung conference ?
 - c) What is SAARC?
 - d) What is Simla Agreement?
 - e) Who imitated look east policy of India?
 - f) What is Indo-Srilanka agreement?
 - g) What is cross-border terrorism ?
 - h) What is Indo-U.S. civil nuclear deal?
 - i) What is the significance of Indo-Soviet peace Tready today.
 - j) Give one example of India's role in Peace keeping by the UN.

P.T.O.

GROUP - B

[16x 4

Answer any FOUR questions.

2. Discuss the major changes in India's foreign Policy in recent times.
3. Discuss the role of India in Non-Alignment movement and its relevance today.
4. Critically analyse Indo-China relation.
5. Discuss India's relation with her neighbours. The image of Big brothers is a problem for India in her relation with neighbours - Discuss.
6. Discuss the role of India in peace-keeping today by the UN.
7. India's relation with USA in changing - Discuss.
8. Critically analyse the role of SAARC in South Asia and the role of India in it.



GACR
PG 3rd SEMESTER EXAMINATION - 2018
(ARTS)

SUBJECT : ODIA
PAPER : P - 303

Full Marks : 80
Time : 4 Hours

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks
Question No.1 is Compulsory & Other Four Answer

ଗବେଷଣା ଓ ଅନୁବାଦ

‘କ’ ବିଭାଗ (ବାଧ୍ୟତାମୂଳକ)

୧. ଯେକୌଣସି ଆଠଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଗୋଟିଏ କିମ୍ବା ଦୁଇଟି ବାକ୍ୟରେ ଦିଅ : (୨x୮=୧୬)

- (କ) ଉପାଦାନ ସଂଗ୍ରହ ପାଇଁ ଗବେଷକଙ୍କୁ କେଉଁ ଦୁଇଟି ଉତ୍ସର ସହାୟତା ନେବାକୁ ହୋଇଥାଏ ?
- (ଖ) ଓଡ଼ିଆ ଭାଷାରେ ପ୍ରଥମ ଗବେଷଣା ନିବନ୍ଧର ନାମ କ’ଣ ଓ ଏହାର ଗବେଷକଙ୍କ ନାମ କ’ଣ ?
- (ଗ) ‘ପ୍ରାଚୀ ସମିତି’ର ପ୍ରତିଷ୍ଠାତାଙ୍କ ନାମ କ’ଣ ?
- (ଘ) ତୃତୀୟ ନବର ସାମନ୍ତରାୟଙ୍କ ଗବେଷଣା ନିବନ୍ଧର ନାମ କ’ଣ ?
- (ଙ) ‘ନୋମ ଚମସ୍କ’ କେଉଁ ବିଷୟରେ ଗବେଷଣା ଓ ଆଲୋଚନାର ନୂତନ ଦିଗକୁ ସୂଚନା ଦେଇଥିଲେ ?
- (ଚ) ତୃତୀୟ ନବର ଶତପଥୀଙ୍କ ଗବେଷଣା ନିବନ୍ଧର ନାମ କ’ଣ ?
- (ଛ) ପାଣିନିଙ୍କ କେଉଁ ପୁସ୍ତକରେ ଭାଷାର ଅଙ୍ଗ ସମ୍ପର୍କରେ ବୈଜ୍ଞାନିକ ବିଶ୍ଳେଷଣ ରହିଛି ?
- (ଜ) ‘ବୌଦ୍ଧବିତର କାବ୍ୟ’ର ଲେଖକଙ୍କ ନାମ କ’ଣ ?
- (ଝ) ମଧୁସୂଦନ ରାଓଙ୍କ ‘ନିର୍ବାସିତର ବିଳାପ’ କବିତା କେଉଁ କବିତାରୁ ଅନୁବାଦ କରାଯାଇଛି ?

(2)

- (ଝ) ଟି.ଏସ.ଏଲିୟଟଙ୍କ ‘ଝେଷଲ୍ୟାଣ୍ଡ ଓ ଅଦର ପୋଏମ’ କବିତା ପୁସ୍ତକକୁ କିଏ ପ୍ରଥମେ ଓଡ଼ିଆରେ ଅନୁବାଦ କରିଥିଲେ ଓ ଅନୁବାଦର ଶୀର୍ଷକ କ’ଣ ଥିଲା ?

‘ଖ’ ବିଭାଗ

(୪x୧୨)

ଯେ କୌଣସି ଋରୋଚି ପ୍ରଶ୍ନର ଉତ୍ତର ଦିଅ ।

୨. (କ) ଗବେଷଣାର ସଂଜ୍ଞା, ସ୍ୱରୂପ ଓ ପ୍ରକାରଭେଦ ଦର୍ଶାଅ ।
(ଖ) ଗବେଷଣାର ବିଭିନ୍ନ ଦିଗ ଉପରେ ଆଲୋଚନା କର ।
(ଗ) ତଥ୍ୟ ସଂଗ୍ରହର ବିଭିନ୍ନ ଉତ୍ସ ନିରୂପଣ କର ।
(ଘ) ଗବେଷଣାରେ କ୍ଷେତ୍ର ଅଧ୍ୟୟନର ଆବଶ୍ୟକତା, ପଦ୍ଧତି, ବ୍ୟାପ୍ତି ଓ ସଂଗ୍ରହ ପ୍ରଣାଳୀ ସମ୍ପର୍କରେ ଆଲୋଚନା କର ।
(ଙ) ଓଡ଼ିଆ ଗବେଷଣା ସାହିତ୍ୟର ଇତିବୃତ୍ତ ସମ୍ପର୍କରେ ଆଲୋଚନା କର ।
(ଚ) ଅନୁବାଦର ସଂଜ୍ଞା, ସ୍ୱରୂପ ଓ ପ୍ରକାରଭେଦ ନିରୂପଣ କର ।
(ଛ) ଓଡ଼ିଆ ସାହିତ୍ୟର ବିକାଶରେ ଅନୁବାଦ ସାହିତ୍ୟର ଭୂମିକା ଓ ବୈଶିଷ୍ଟ୍ୟ ନିରୂପଣ କର ।



GACR
PG 3rd SEMESTER EXAMINATION - 2018
(ARTS)

SUBJECT : ECONOMICS
PAPER : 303

Full Marks : 80
Time : 4 Hours

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks

Group - A (Compulsory)

1. Write short notes on - (Any EIGHT) (2x8=16)
- (a) Dumping
 - (b) Optimum tariff
 - (c) Absolute advantage in international trade.
 - (d) Import quotas
 - (e) Fixed exchange rate
 - (f) Customs Union
 - (g) Export subsidies
 - (h) J - curve
 - (i) Disequilibrium in balance of payment
 - (j) Hypothesis of secular deterioration.

Group - B

Answer any FOUR from the following questions.

2. Critically examine the theory of opportunity costs. (16)
- OR
- State and explain Rybczynski theorem of international trade.

(2)

3. What do you mean by terms of trade? Discuss Kravis theory of availability. (16)

OR

Discuss Emanuel's theory of unequal exchange in trade.

4. What are export subsidies? Explain the effect of export subsidies on exporting and importing countries. (16)

OR

Explain the effective rate of protection and give its importance.

5. Critically examine the purchasing power parity theory of exchange rate. (16)

OR

What do you mean by equilibrium in balance of payment? Explain the conditions necessary for such equilibrium.

6. What is foreign trade multiplier? Discuss the role of foreign trade multiplier in determining national income and output. (16)

OR

Write notes on :-

- (a) Optimum currency Areas
- (b) Policies for achieving internal and external equilibrium.



GACR
PG 3rd SEMESTER EXAMINATION - 2018
(ARTS)

SUBJECT : EDUCATION
PAPER : 303

Full Marks : 60
Time : 4 Hours

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks

Group - A (Compulsory)

1. Answer any SIX of the following question in two sentences : (2x6)
- (a) Objectives of special education.
 - (b) Need of Integrated Education.
 - (c) Any two types of handicaps.
 - (d) Characteristics of partially sighted.
 - (e) Special Education in historical perspective - in Vedic Period.
 - (f) Classification of mentally retarded children.
 - (g) Training for hearing impaired.
 - (h) Care and training of mentally retarded.

Group - B

Answer any Four Questions of the following :

1. Discuss educational provisions of orthopedically handicapped children. (12)

(2)

2. Define Special Education, What are its nature and objectives. (12)
3. Write a brief history of special education. (12)
4. What are the differences between Special and Integrated Education. (12)
5. What are the causes and Role of teacher of visually impaired. (12)
6. What do you mean by mental retardation. Discuss integration design of Mentally Retarded. (12)

-X-X-X-

GACR
PG 3rd SEMESTER EXAMINATION - 2018
(ARTS)

SUBJECT : ENGLISH
PAPER : 303

Full Marks : 80
Time : 4 Hours

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks

Group - A (Compulsory)

1. Answer any EIGHT of the following Questions :

(2x8=16)

- (a) State the theme of "The Lotus".
- (b) What is the poet's main concern in "The Harp of India"?
- (c) Who is Madhusudan Dutt? Name some of his works.
- (d) What are the chief qualities of Sarojini Naidu's poetry?
- (e) What is the theme of Jayant Mahapatra's "Relationship"?
- (f) What is "Night of the Scorpion" about?
- (g) Why does the speaker say "The poets only sang of the floods"?
- (h) State the theme of "The Wild Bougainvillea".
- (i) What does the speaker say about his aging mother in "Dawn at Puri"?
- (j) What is Pritish Nandy's "Calcutta If You Must Exile Me" about?

(2)

Group - B

Answer any FOUR of the following questions : (4x16 = 64)

2. Critically appreciate "Our Casuarina Tree".
OR
Highlight the features of Derozio's poetry in "The Harp of India".
3. How does the speaker describe the abduction in "The Captive Ladie"?
OR
Analyze the theme of "The Soul's Prayer".
4. Bring out Jayant Mahapatra's thoughts in "Relationship".
OR
Critically appreciate Poet, Lover, Birdwatcher".
5. Highlight the note of grief in "A River".
OR
Show the features of Confessional Poetry in "An Introduction".
6. Discuss the theme of "Calcutta If You Must Exile Me".
OR
Analyze the poem "A Little Distance".
7. Discuss the theme of "The Lotus".
OR
Critically appreciate "Song of the Hindustanee Minstrel".

(3)

8. Annotate any TWO of the following:

- (a) The heart eternally is blest
Where hope eternal springs;
Then hush thy sorrows all to rest,
We'll treat the courts of kings.
- (b) To force the pace and never to be still
is not the way of those who study birds
Or women.
- (c) Who are you, I ask each and everyone,
The answer is, it is I.

- x - x - x -

GACR
PG 3rd SEMESTER EXAMINATION - 2018
(COMPUTER SCIENCE)

SUBJECT : Internet and Web Technology
PAPER : MCS - 303

Full Marks : 80
Time : 4 Hours

Answer all Questions as per the instruction
The figure in the right hand margin indicate marks

Section - A (Compulsory)

1. Answer any **Eight** of the following questions : (2x8)

- (a) State the role of HTTP in internet.
- (b) How frameset is useful in designing a web page?
- (c) Differentiate Client-side and Server-side programming.
- (d) What is the difference between == and === in javascript?
- (e) State the advantages of Dynamic web page over Static web page with example.
- (f) What is Session Tracking?
- (g) How a server handles user's request?
- (h) Define Action Tag with example.
- (i) What is type casting?
- (j) What is URL mapping?

Section - B (Answer any FOUR)

2. a. Define list. Describe the html tags used to create ordered and unordered lists with examples. (8)
- b. Write HTML code to create a form as follows. On clicking the <RESET> button the whole form has to rest. (8)

(2)

Name	<input type="text"/>
DOB	<input type="text"/>
Phone No.	<input type="text"/>
Address	<input type="text"/>
Nationality	<input type="text"/>
<input type="radio"/> Male	<input type="radio"/> Female
<input type="checkbox"/> Married	
<input type="button" value="Submit"/>	<input type="button" value="Reset"/>

3. a. Describe the different control structures used in Java Script. Write a JavaScript recursive function to calculate the factorial of a given no. (8)
- b. Write a JS function to store 10 numbers to an integer array, sort them and display. (8)
4. a. What is style Sheet? Describe the different types of Style sheets used with examples. Which Style Sheet is preferred by developers and why? (8)
- b. Draw a comparative statement on different technologies used for dynamic page creation. (8)

(3)

5. a. How multiple inheritance is handled in Java? Give brief description and support your answer with suitable example. (8)
- b. State the advantages of Java Servlet over CGI. Write a servlet for session tracking. (8)
6. a. What is the purpose of declarative tag in JSP? Briefly describe the JSP architecture. What are the advantages of JSP over servlets? (8)
- b. Describe in detail JSP life cycle and its associated methods. (8)
7. a. What is a web application? What are the basic characteristics of a web application? What are the steps involved in developing a web module? What is an interactive web page? (8)
- b. Explain the lifecycle of a servlet and the associated methods in detail. (8)
8. Write short notes on (any Four) : (4x4)
- a. Document Object Model
 - b. MVC Architecture
 - c. Event Handling
 - d. Type casting
 - e. Inter Servlet Collaboration
