

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.*

विभाग - क

1. निम्नलिखित प्रश्नों में से किन्हीं आठ प्रश्नों के अति संक्षिप्त [2x8]  
उत्तर दीजिए।
- क) भक्तिकाल का दूसरा नाम क्या है?
- ख) हिन्दी साहित्य में किस काल को स्वर्णयुग कहा जाता है?
- ग) निर्गुण प्रेममार्गी काव्यधारा के किसी एक प्रमुख कवि का नाम लिखिए।
- घ) कृष्ण भक्ति शाखा के महाकवि सुरदास रचित गीतिकाव्य का नाम लिखिए।
- ङ) कबीर दास के गुरु का नाम क्या है ?
- च) कबीर दास पत्थर की चक्की की पूजा और आदर बात क्यों कहते हैं?
- छ) महाकाव्य 'पद्मावत' की भाषा क्या है?
- ज) सुरदास की भक्ति किस भाव की है?
- झ) 'भ्रमरगीत' में गोपियों को निर्गुण का उपदेश कौन देते हैं?
- ञ) 'भरत महिमा' कविता के आधार पर बताएँ कि भरत के दर्शन से वनवासियों की क्या प्रतिक्रिया हुई?

## विभाग - ख

[16x 4

2. निम्नलिखित प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर दीजिए।

क) भक्तिकाल का सामान्य परिचय देकर इसकी सामाजिक एवं राजनैतिक पृष्ठभूमि पर रोशनी डालिए।

ख) निर्गुण प्रेममार्गी शाखा का परिचय प्रदान कीजिए।

ग) पठित कबीर की साखियों के आधार पर ईश्वर के अस्तित्व एवं कबीर के जीवनोपदेशों को लिखिए।

घ) सुरदास के 'भ्रमरगीत' की विशेषताओं को अपने शब्दों में लिखिए।

ङ) 'भरत महिमा' के आधार पर भरत के राम तक पहुंचने की यात्रा को अपने शब्दों में लिखिए।

च निम्न प्रश्नों के उत्तर दीजिए।

i) तुलसी दास पर टिप्पणी लिखिए।

ii) चढा असाढ गगन घन साजा।

सांजा बिरह दुंद दल बाजा।

इस पंक्ति की सप्रसंग व्याख्या कीजिए।

छ) सगुण काव्यधारा के रामभक्ति शाखा की विशेषताओं को लिखिए।



**GACR**  
**+3 1<sup>st</sup> SEMESTER EXAMINATION - 2018**  
**(ARTS)**  
**SOCIOLOGY (GE - I)**

Time : 3 Hours

Full Marks : 80

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

GROUP - A

1. Answer any Eight of the following : (2x8)
- a) Name the branch which links Sociology with Anthropology.
  - b) Mention any two elements of Society.
  - c) What is a pure Science?
  - d) Give any two distinctions between folkways and mores.
  - e) What is out-group?
  - f) What do mean by Social processes?
  - g) Describe power.
  - h) Give an example of Informal Social Control.
  - i) What is Race?
  - j) Define Sociology?

GROUP - B

(Answer any Four of the following)

2. Describe the scope of Sociology. (16x4)
3. Discuss the Characteristics of Culture.

P.T.O.

(2)

4. Define Socialization and discuss its various stages.
5. Examine marxian theory of social stratification.
6. Describe some agencies of Social Control.
7. Discuss importance of competition in modern society.
8. How is sociology related to Economics?



**+3, 1<sup>st</sup> SEMESTER EXAMINATION-2018  
(SCIENCE)**

**Sub: STATISTICS**

Full Marks: 60

**Paper: GE-I**

Time: 3 Hours

*Answer the questions as per instruction.*

*The figure in the right hand margin indicate marks.*

**GROUP - A**

1. (a) What do you mean caption and stub? [2x6]
- (b) What are the essentials of classification of data?
- (c) Give general rules of tabulation.
- (d) The standard deviation of 50 observations is 6.5. Find the standard deviation if every observation is increased by 5.
- (e) If  $2u = x$ , and Harmonic mean of  $x$  is 4. Find the harmonic mean of  $u$ .
- (f) If correlation coefficient is 0.7. What is the value of coefficient of non determination.
- (g) Explain properties of probable error.
- (h) Explain the uses of regression analysis.

**GROUP-B**

**Answer any FOUR of the following.**

2. (a) Discuss the comparative merits of various methods of collecting primary data. [6+6]
- (b) Discuss the various sources of collecting secondary data.
3. (a) The arithmetic mean of two observations is 127.5 and their geometric mean is 60. Find their harmonic mean and also obtain observations. [6+6]

(P.T.O...)

[2]

- (b) Average of two numbers is 20 and their standard deviation is 5. Find the two numbers.
4. (a) Prove that for any discrete distribution standard deviation is not less than mean deviation from mean. [6+6]
- (b) Show that for discrete distribution  $\beta_2 > 1$ .
5. (a) What is skewness? Define its type. What are relative and absolute measures. [6+6]
- (b) For a moderately skewed distribution, A.M=160, mode=157, and standard deviation=50. Find C.V., median and pearsonian coefficient of skewness.
6. (a) Prove that correlation coefficient lies between -1 to +1. [6+6]
- (b) If  $\sum x = 132$ ,  $\sum y = 96$ ,  $\sum x^2 = 3274$ ,  $\sum y^2 = 1632$ ,  $\sum (x+y)^2 = 9314$ ,  $n = 6$ , Find the value of '  $\gamma$  '.
7. (a) Out of two regression equations given below which one is the regression equation of x on y and y on x. [6+6]  
 $2x + 4y = 10$ ,  $4x + 6y = 8$
- (b) Explain properties of regression equation.
8. (a) Rank correlation between x and y is 0.5 and no. of pair is 10. It was then detected that the difference in ranks in two pairs was wrongly taken to be 3 in place of 7. [6+6]  
What should be the correct rank correlation coefficient.
- (b) Can  $y = 5 + 2.8x$  and  $x = 3 - 0.5y$  be the estimated regression equations of Y on X and X on Y respectively. Explain your answer with suitable theoretical argument.

**+3, 1<sup>st</sup> SEMESTER EXAMINATION-2018  
(SCIENCE)**

**Sub: BOTANY**

Full Marks: 60

**Paper: GE-I**

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.** [2x6]

- (a) Guttation
- (b) Hydroponics
- (c) Chlorophylls
- (d) Compensation point
- (e) Feed back inhibition
- (f) Girdling experiment
- (g) Vernalization
- (h) Apical dominance

**GROUP-B**

**Answer any FOUR questions.**

- 2. Describe the mechanism of mineral absorption in plants. [12]
- 3. Give an illustrated account of the path of Carbon in photosynthesis. [12]
- 4. Explain the glycolytic breakdown of glucose into pyruvic acid during respiration. Add a note on its energetics. [12]

(P.T.O...)

[2]

5. Explain the process of biological nitrogen fixation in Leguminous plant. [12]
6. Describe the role of florigen in stimulating flowering in different types of photoperiod sensitive plants. [12]
7. What is water potential? Describe its various components. [12]
8. Write notes on: [6x2]
  - (a) Facilitated diffusion
  - (b) Oxidative phosphorylation

- x - x - x -



**+3, 1<sup>st</sup> SEMESTER EXAMINATION-2018**  
**(SCIENCE)**

Sub: CHEMISTRY

Full Marks: 60

Paper: GE-I

Time: 3 Hours

*Answer the questions as per instruction.*

*The figure in the right hand margin indicate marks.*

**GROUP - A (Compulsory)**

[2x6]

**1. Answer any SIX questions.**

- (a) Write the electronic configuration of copper.
- (b) Draw the resonating structures of  $\text{CO}_3^{2-}$ .
- (c) Differentiate between bonding and anti bonding molecular orbital.
- (d) Explain why aniline is less basic than methyl amine.
- (e) Which of the following alkynes does not react with ammoniacal silver nitrate solution?  
acetylene, but-1-yne, but-2-yne, propyne
- (f) Predict the major product of the following reaction  
 $\text{CH}_3 - \text{CH}_2 - \text{CH}(\text{Br}) - \text{CH}_3 \xrightarrow{\text{KOH(aLc)}}$
- (g) The number of radial nodes for 3s orbital is \_\_\_\_\_  
& for 2p orbital is \_\_\_\_\_.
- (h) Define lattice energy

**GROUP - B**

**Answer any FOUR questions**

2. (a) State and derive de-Broglie equation [2+4]
- (b) Electrons in an atom are in motion & not stationary. [2]  
Explain.
- (c) Why exactly half filled & fully filled configurations [4]  
are stable configurations?

(P.T.O...)

3. (a) Explain the terms polarising power and polarizability. [2+6]  
Write in brief the factors affecting polarisation
- (b) In  $\text{CO}_2$  molecule individual bond is polar but the molecule [2]  
is non polar. Explain.
- (c)  $\text{NaCl}$  is more soluble than  $\text{MgO}$  in water. Give reasons. [2]
4. Explain the structures of the followings with the help of [12]  
USEPR theory & hybridisation  
 $\text{SF}_6$ ,  $\text{ClF}_3$ ,  $\text{SO}_4^{2-}$ ,  $\text{NH}_3$ .
5. (a) How hexane-2, 5- dione will be prepared from ethyl [3]  
acetoacetate?
- (b) How acetone will be synthesized by using methyl [3]  
magnesium bromide?
- (c) Show that cyclopropenyl cation is aromatic [2]
- (d) What are carbocations? Discuss about its geometry. [2+2]
6. Write notes on the followings. [4x3]
- (a) Ozonolysis of 2-methyl but-2-ene.
- (b) Acidic nature of alkynes
- (c) Hydration of acetylene.
7. Write notes on [3x4]
- (a) Chlorination of methane
- (b) Kolbe's synthesis of alkane.
- (c) Peroxide effect
- (d) Dehydration method for preparation of alkene.
8. (a) Write a note on hyper conjugation. How it explains [3+3]  
directive influence of alkyl group.
- (b) Which of the following is the strongest acid and why? [2]  
Acetic acid, Chloro acetic acid, Dichloro acetic acid,  
Trichloro acetic acid.
- (c) Give examples (one each) of neutral nucleophile, negative [4]  
nucleophile, neutral electrophile, positive electrophile

+3, 4<sup>th</sup> SEMESTER EXAMINATION-2019  
(ARTS)

SUBJECT : HINDI

Full Marks: 80

PAPER : GE-IV

Time: 3 Hours

*Answer the questions as per instruction.*

*The figure in the right hand margin indicate marks.*

SEC-A

१. निम्नलिखित प्रश्नों में से किन्हीं आठ प्रश्नों के उत्तर दीजिए। [2 x 8]

- (क) भक्ति काल की समयसीमा क्या है ?  
(ख) तुलसी जी की दो प्रसिद्ध रचनाओं के नाम लिखिए।  
(ग) “भ्रमरगीत” का तात्पर्य समझाइए।  
(घ) सुरदास के गुरु कौन थे ?  
(ङ) “ऐकेश्वरवाद” का तात्पर्य समझाइए।  
(च) “भरत एक आदर्श भाई है” स्पष्ट कीजिए।  
(छ) जायसी की किन्हीं दो रचनाओं के नाम लिखिए।  
(ज) कबीर की भाषा को क्या कहा जाता है ?  
(झ) “निराकार ईश्वर” का अर्थ क्या है ?  
(ञ) “सूफीओं” की भाषा क्या थी ?

SEC-B

२. निम्न प्रश्नों में से किन्हीं चार प्रश्नों का उत्तर दीजिए।

[16x4]

- (क) भक्तिकाल की सामाजिक एवं राजनीतिक परिस्थिति पर प्रकाश डालीए।

(P.T.O...)

(ख) निर्गुण ज्ञान मार्गी संतों की काव्यगत प्रवृत्तियों की चर्चा कीजिए।

(ग) हिन्दी साहित्य में रामकाव्य परम्परा का उल्लेख कीजिए।

(घ) व्याख्या कीजिए।

(i) कबीर सूता क्या करे, जागी न जतौ मुरारि।

एक दिनाँ है सोवणाँ लबें पाँव पसारि ॥

(ii) जाके मुँह माया नहीं, नाहिँ रूप कुरूप।

पुहुप बासा तै पातरा, ऐसा तत्व अनुप ॥

(ङ) (i) सारस जोरी किनी वेहरी, मारि गएउ किन खग्गि।

झुरि झुरि पाँजरी घानि भई, विरह के लगी अग्गी ॥

(ii) जल थल भरे अपूरि सब, गँगन धरति मिलि एक।

धनि जोबन औगाह महेँ, दे बूडत पिय टेक ॥

(च) (i) मेरो मन अनत कहाँ सुख पावै।

जैसे उडि जहाज को पच्छी, फिरि जहाज पर आवे।

(ii) ऊधो; मन माने की बात

दाख्य छोहरा छाँडी, अमृतफल विषकीरा विष खात

ज्यों चकोर कौं देइ कपूर कोउ, ताजि, अंगार अघात।

(छ) (i) चलत पयादेँ ख्यात फल पिता दीह तजि राजु।

जात मनावन रघुबरहिँ भरत सरीस को आजु ॥

(ii) तहि बासर बसि प्रताहीं चले सुमिरि रघुनाय

राम दरस की यालसा भरत सरिस सब साय ॥

जैसे उडि जहाज को परछी, फिरि जहाज पर आवे।

**GACR**  
**+3, 1<sup>st</sup> SEMESTER END EXAMINATION-2018**  
**(ARTS)**

Sub.- ODIA  
**PAPER : GE- I**

Time : 3 Hours

Full Marks : 80

ପ୍ରଥମ ପ୍ରଶ୍ନ ବାଧ୍ୟତାମୂଳକ ସହିତ ଅନ୍ୟ ଯେକୌଣସି ଚାରିଗୋଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଦିଅ

*The figure in the right hand margin indicate marks.*

୧. (ଯେ କୌଣସି ୮ଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଦିଅ) (୨×୮

- (କ) ମନ୍ତ୍ରଣ ପ୍ରବନ୍ଧ କାହାକୁ କହିଛି ?
- (ଖ) ବିଭାବନା ଅଳଙ୍କାର କାହାକୁ କହିଛି ?
- (ଗ) ଗଦ୍ୟ ପ୍ରବନ୍ଧ ଓ ରମ୍ୟରଚନା କାହାକୁ କୁହାଯାଏ ?
- (ଘ) ଓଡ଼ିଆ ଭ୍ରମଣ ସାହିତ୍ୟ
- (ଙ) ଦୁଇଟି ସହରୀ ଜୀବନ ଭିତ୍ତିକ ଉପନ୍ୟାସର ନାମ ଲେଖ ।
- (ଚ) କେଉଁ ଯୁଗର କବିଙ୍କ କବିତାରେ ସାମ୍ୟବାଦର ବାଣୀ ଶୁଣିବାକୁ ମିଳେ ?
- (ଛ) କରୁଣ ରସସିଦ୍ଧି ୨ ଗୋଟି ଓଡ଼ିଆ କ୍ଷୁଦ୍ରଗଳ୍ପର ନାମ ଲେଖ ।
- (ଜ) ଦୁଇଗୋଟି ମିଥ୍ୟ ଧର୍ମୀ କବିତାର ନାମ ଲେଖ ।
- (ଝ) ପ୍ରବନ୍ଧର ଆଭିମୁଖ୍ୟ କିପରି ହେବା ଉଚିତ ?
- (ଞ) ଓଡ଼ିଆରେ ବ୍ୟବହୃତ ହେଉଥିବା କ୍ରିୟାପଦ ଗୁଡ଼ିକର ପରିଚୟ ପ୍ରଦାନ କର ।

(ଯେକୌଣସି ୪ଟି ପ୍ରଶ୍ନର ଉତ୍ତର ଦିଅ) (୧୭ × ୪

୨. ଭାଷା ଓ ବ୍ୟାକରଣ ଶିକ୍ଷାଦାନର ଉଦ୍ଦେଶ୍ୟ ଓ ଆବଶ୍ୟକତା ସମ୍ପର୍କରେ ଆଲୋଚନା କର ।
୩. ଜୀବନର ସାର୍ଥକ ପ୍ରତିଫଳନ ଓ ଆନନ୍ଦ ଦାନ ହେଉଛି କବିତାର ଅନ୍ୟତମ ଉଦ୍ଦେଶ୍ୟ, ବିଚାର କର ।
୪. ଆତ୍ମଚେତନା ପରିପ୍ରକାଶରେ ଗଦ୍ୟପାଠ ଓ ଶିକ୍ଷାଦାନର ଭୂମିକା ସମ୍ପର୍କରେ ଆଲୋଚନା କର ।

ପୃଷ୍ଠା ଓଲଟାଅ.

[ 2 ]

୪. କଥା ସାହିତ୍ୟ ଅଧ୍ୟୟନ ପାଠକକୁ କେବଳ ଆନନ୍ଦ ଦାନ କରିନଥାଏ, ଏହା ମଧ୍ୟ ନୀତିଶିକ୍ଷା ପ୍ରଦାନରେ ସମର୍ଥ । ବିଚାର କର ।
୬. ସାହିତ୍ୟ ପାଠର ଆବଶ୍ୟକତା ଓ ଏହାର ବିବିଧତା ମନୁଷ୍ୟକୁ କିପରି ଅମୃତ ସନ୍ଧାନୀ କରିପାରିଛି ଆଲୋଚନା କର ।
୭. ରସ ଓ ଅଳଙ୍କାରର ପ୍ରୟୋଗ କାବ୍ୟ କବିତାକୁ କିପରି ହୃଦୟଗ୍ରାହୀ କରି ଗଢ଼ି ତୋଳିବାରେ ସହାୟକ ହୋଇଥାଏ ? ବିଚାର କର ।
୮. ଗଳ୍ପ ଉପନ୍ୟାସରେ ସମାଜ ସଚେତନାର ବାର୍ତ୍ତା ସମ୍ବନ୍ଧରେ ନିବନ୍ଧଟିଏ ପ୍ରସ୍ତୁତ କର ।

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**GACR**  
**+3, 1<sup>st</sup> SEMESTER EXAMINATION-2019**  
**(SCIENCE)**

Sub.- Mathematics  
 PAPER : GE-I

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. [8 x 2]
- a) What is the curvature of a circle having centre at (2, 3) and radius 6.
  - b) Find the asymptotes of the  $y = \sec x$
  - c) State the general equation of cylinder.
  - d) Evaluate  $\lim_{x \rightarrow 0} \frac{\tan x - 2x}{\sin 2x}$  using L'Hospital rule.
  - e) State Lagrange's mean value theorem.
  - f) Write down the Maclaurin's series of  $e^{2x}$ .
  - g) If  $z = \tan^{-1}\left(\frac{y}{x}\right)$  find  $\frac{\partial f}{\partial x}$  and  $\frac{\partial f}{\partial y}$
  - h) Define Wronskian.
  - i) Solve  $\frac{dy}{dx} = x + y$
  - j) Find the particular integral of  $(D^2 - 3D + 2)y = e^{2x}$

[2]

**Answer any FOUR questions.**

2. a) Find the curvature to the curve  $\gamma = a(1 + \cos \theta)$  [8]

b) Find the asymptotes to the curve [8]

$$2x^2y - xy^2 - x^3 + 3xy + 2y^2 - 3x + 2y = 3$$

3. a) Verify Rolle's theorem for the function

$$f(x) = x^3 - 2x^2 - 9x + 18, x \in [2, 3]$$
 [8]

b) Find the Taylor's series for the function

$$f(x) = xe^x \text{ about } x = 2$$
 [4+4]

4. a) Find the Maclaurin's series for the function

$$f(x) = \log(3+2x)$$

b) State and prove Cauchy mean value theorem

5. a) Verify Euler's theorem for [8]

$$f(x, y) = \frac{x^3 - xy^2}{3x + 2y}$$
 [8]

b) Expand  $f(x, y) = \sin x + \cos y$  about

$$(\pi/4, \pi/3)$$
 [8]

6. a) Evaluate  $\int_0^1 \int_x^{x^2} (x^3 - xy^2) dx dy$  [8]

b) Solve  $y'' + 9y = \sec 3x$  [8]

[3]

7. a) Solve  $x^2y'' - 2xy' + 3y = x^3 \log x$  [8]

b) Solve  $y - p \tan p - \log \cos p = 0$  [8]

8. a) Solve  $(D^2 + 4)y = x \sin x$  [8]

b) Solve  $(D^2 + 2)y = x^2 e^{3x}$  [8]





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**GACR**  
**+3, 1<sup>st</sup> SEMESTER END EXAMINATION-2018**  
**(ARTS)**

**Sub.- Education**  
**PAPER : GE - I**

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 questions.
  - i) Write any two nature of liberty.
  - ii) State any two features of democracy.
  - iii) Write any two aspects of integral education.
  - iv) In which year with what purpose was *Shantiniketan* established?
  - v) State any two objectives of Mid-day-Meal programme.
  - vi) State any two objectives of S.S.A.
  - vii) Write any two features of common school system.
  - viii) Write any two factors responsible for social change.

**Group - 'B'**

Answer any FOUR questions given below.

[2+10]

2. What is social justice? Explain the nature and constitutional provisions in relation to social justice.

OR

[P.T.O.]

Write short notes on the following :

- a) Constitutional provision in respect of secularism. [6+6]  
 b) Critically examine the social aims of education.  
 3. What was Tagore's philosophy of life? Bring out his views on practical aspects of education. [3+9]

OR

- Discuss the educational philosophy of Jiddu Krishnamurty in respect of aims, curriculum methods of teaching and teacher. [12]  
 4. What is universalisation of primary education? Discuss the problems in the way of universalisation. [2+10]

OR

- Define the term wastage and stagnation. Discuss the causes and remedial measures of wastage and stagnation. [3+9]  
 5. What is equality of educational opportunity? Explain the remedial measures taken for equalisation of educational opportunities. [2+10]

OR

- What is single teacher school? Explain the reasons of functioning single teacher school and bring out its merits and demerits. [2+10]  
 6. What is economic development? Describe the role of education for economic development. [3+9]

OR

Define social and cultural change. Discuss the role of education as an instrument of social change. [4+8]

■■■■