Exam. Code : 103201
Subject Code : 1001

B.A./B.Sc. Semester—I
ENGLISH COMPULSORY

Time Allowed—3 Hours]   [Maximum Marks—50

Note :— Students are required to attempt **five** questions, selecting at least **one** question from each Section. The Fifth question may be attempted from any Section.

SECTION—A

I. (1) For each situation ask a question using the words in bracket :—

   (i) You have a friend who is learning Arabic.

                    (how long/learn/Arabic)

   (ii) A friend of yours is a teacher.

                    (how long/teach)

(2) Put the verb into the correct form, past perfect or past simple :—

   (i) I felt very tired when I got home, so I _____ (go) straight to bed.

   (ii) Was Paul at the party when you arrived ? 'No, he _____ (go) home'.

   (iii) Sorry I'm late. The car _____ (break) down on my way here.

01(2118)/DAG-8745   I   (Contd.)

(3) Put in *when* on *if* :—

    (i) Don't worry _____ I'm late tonight.

    (ii) Be careful. You'll hurt yourself _____ you fall.

    (iii) I'm going away for a few days. I'll call you _____ I get back.

    (iv) I'm going shopping. _____ you want anything, I can get it for you.

    (v) We can eat at home or, _____ you prefer, we can go to a restaurant. 1×10=10

II. (1) Complete the sentences using *could, couldn't* or *managed to* :—

    (i) My grandmother loved music. She _____ play the piano very well.

    (ii) A girl fell into the river, but fortunately we _____ pull her out.

(2) Put in *must* or *can't* :—

    (i) It rained every day during their holiday, so they _____ have had a very nice time.

    (ii) You got here very quickly. You _____ have walked very fast.

    (iii) Bill and Sue always stay at luxury hotels, so they _____ be short of money.

    (iv) The restaurant _____ be very good. It's always empty.

(3) Read the situation and write a question using the word in brackets :—

    (i) You want to borrow your friend's bike. What would you say to him ? (think)

    (ii) You want to leave work early. What do you ask your boss ? (mind)

(4) Put in *been* or *gone* :—

    (i) James is on holiday. He's _____ to Italy.

    (ii) Hello ! I've just _____ to the shops. I've bought lots of things. 1×10=10

SECTION—B

III. (1) Write a paragraph on any one of the following topics :—

    (i) My Ambition

    (ii) Drug Addiction. 1×5=5

(2) Put the words in the correct order :—

    (i) my eyes/I/two years ago/had/tested/ the last time/was.

    (ii) as soon as possible/need/translated/we/to get/ this document. 1×2=2

(3) Put the verb into correct form :—

    (i) I'd be very scared if somebody _____ (point) a gun at me.

    (ii) I can't afford to buy a car. If I _____ (buy) a car, I'd have to borrow the money.

    (iii) Don't lend Amy your car. If she _____ (ask) me, I wouldn't lend her mine. 1×3=3

IV. (1) Write a paragraph on any one of the following :—

    (i) College Life

    (ii) Pleasures of Reading.   1×5=5

  (2) Complete the sentences with *say* or *tell* (in the correct form) :—

    (i) Ann _____ goodbye to me and left.

    (ii) _____ us about your holiday. Did you have a nice time ?

    (iii) Don't just stand there! _____ something!'

    (iv) Gary couldn't help me. He _____ me to ask Chris.

    (v) Gary couldn't help me. He _____ to ask Chris.

                             1×5=5

SECTION—C

V. Write a character sketch of Madame Orielle.   10

VI. Comment on the significance of the title 'Shroud'.   10

SECTION—D

VII. How was Grimsdyke's life deeply influenced by 'the power of women' ?   10

VIII. Who is made fun of in the essay 'Symptoms' ?   10

Exam. Code : 103201

Subject Code : 1002

B.A./B.Sc. 1st Semester

PUNJABI COMPULSORY

Time Allowed—3 Hours]   [Maximum Marks—50

ਨੋਟ:— ਪ੍ਰਸ਼ਨ ਪੱਤਰ ਦੇ **ਚਾਰ** ਭਾਗ ਹੋਣਗੇ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ **ਦੋ** ਪ੍ਰਸ਼ਨ ਪੁੱਛੇ ਜਾਣਗੇ। ਵਿਦਿਆਰਥੀ ਨੇ ਕੁੱਲ **ਪੰਜ** ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਭਾਗ ਵਿੱਚੋਂ **ਇੱਕ** ਪ੍ਰਸ਼ਨ ਲਾਜ਼ਮੀ ਹੈ। ਪੰਜਵਾਂ ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ।

ਭਾਗ-ੳ

1. 'ਸਮਾਂ' ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ ਲਿਖੋ।

ਜਾਂ

2. 'ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ' ਦੇ ਜੀਵਨ ਤੇ ਰਚਨਾ ਬਾਰੇ ਸੰਖੇਪ ਜਾਣਕਾਰੀ ਦਿਓ।   10

ਭਾਗ-ਅ

3. 'ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ' ਜੀਵਨੀ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ ਲਿਖੋ।

ਜਾਂ

4. 'ਫਲੋਰੈਂਸ ਨਾਈਟਿੰਗੇਲ' ਜੀਵਨੀ ਦਾ ਸਾਰ ਲਿਖੋ।   10

ਭਾਗ-ੲ

5. ਹੇਠ ਲਿਖਿਆਂ ਵਿੱਚੋਂ ਕਿਸੇ **ਇੱਕ** ਵਿਸ਼ੇ 'ਤੇ ਪੈਰ੍ਹਾ ਰਚਨਾ ਕਰੋ :

    (i) ਸਦਾਚਾਰ

    (ii) ਸਮਾ

    (iii) ਸ਼ੁਕਰਾਨਾ ਭਾਵ।   10

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6. ਹੇਠ ਲਿਖੇ ਪੈਰ੍ਹੇ ਨੂੰ ਪੜ੍ਹ ਕੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਉੱਤਰ ਦਿਓ :

ਲੇਖ ਅਜਿਹੀ ਰਚਨਾ ਦਾ ਨਾਂ ਹੈ ਜਿਸ ਵਿੱਚ ਕਿਸੇ ਵਿਸ਼ੇ ਬਾਰੇ ਖਾਸ ਬੱਝਵੀਂ ਤਰਤੀਬ ਨਾਲ ਵਾਕਫ਼ੀ ਦਿੱਤੀ ਜਾਂਦੀ ਹੈ। ਮੁੱਖ ਤੌਰ ਤੇ ਅਜਿਹੀ ਰਚਨਾ ਦੇ ਤਿੰਨ ਪੱਖ ਹੁੰਦੇ ਹਨ। ਸਭ ਤੋਂ ਪਹਿਲਾ ਪੱਖ ਲੇਖ ਦਾ ਵਿਸ਼ਾ ਹੁੰਦਾ ਹੈ। ਵਿਸ਼ਾ ਜੀਵਨ ਦਾ ਕੋਈ ਵੀ ਵਿਚਾਰ ਅਨੁਭਵ ਜਾਂ ਕੋਈ ਵੀ ਵਸਤੂ ਹੋ ਸਕਦੀ ਹੈ। ਕਿਸੇ ਵੀ ਨਿਗੁਣੀ ਤੋਂ ਨਿਗੁਣੀ ਤੇ ਮਹਾਨ ਤੋਂ ਮਹਾਨ ਵਸਤੂ ਉੱਤੇ ਲੇਖ ਲਿਖਿਆ ਜਾ ਸਕਦਾ ਹੈ। ਲੇਖ ਦਾ ਦੂਜਾ ਪੱਖ ਭਾਸ਼ਾ ਹੈ। ਲੇਖ ਵਾਰਤਕ ਵਿੱਚ ਲਿਖਿਆ ਜਾ ਸਕਦਾ ਹੈ ਤੇ ਜਿਸ ਵਿੱਚ ਵਿਆਕਰਣ ਦੇ ਨਿਯਮਾਂ ਨੂੰ ਧਿਆਨ ਵਿੱਚ ਰੱਖਣਾ ਜ਼ਰੂਰੀ ਹੈ। ਲੇਖ ਦਾ ਤੀਜਾ ਪੱਖ ਹੈ। ਇਸ ਦਾ ਅਰਥ ਹੈ ਬਿਆਨ ਕਰਨ ਦਾ ਢੰਗ। ਸਰਲਤਾ, ਸਪੱਸ਼ਟਤਾ ਦੇ ਨਾਲ-ਨਾਲ ਆਪਣੀ ਸ਼ੈਲੀ ਨੂੰ ਸੰਜਮ ਭਰੇ ਢੰਗ ਨਾਲ ਬਿਆਨ ਕਰਨਾ ਲੇਖ ਦੀ ਸ਼ੈਲੀ ਹੈ।

(i) ਲੇਖ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?

(ii) ਲੇਖ ਦਾ ਵਿਸ਼ਾ ਕਿਹੋ-ਜਿਹਾ ਹੋ ਸਕਦਾ ਹੈ ?

(iii) ਲੇਖ ਦੇ ਕਿੰਨੇ ਪੱਖ ਹੁੰਦੇ ਹਨ ?

(iv) ਸ਼ੈਲੀ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?

(v) ਲੇਖ ਦੀ ਭਾਸ਼ਾ ਕਿਹੋ-ਜਿਹੀ ਹੁੰਦੀ ਹੈ ?   5×2

ਭਾਗ–ਸ

7. ਉਪਭਾਸ਼ਾ ਤੋਂ ਕੀ ਭਾਵ ਹੈ ? ਪੰਜਾਬੀ ਉਪਭਾਸ਼ਾਵਾਂ ਦੇ ਪਛਾਣ ਚਿੰਨ੍ਹ ਦੱਸੋ।

ਜਾਂ

8. ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਨਿਕਾਸ ਬਾਰੇ ਜਾਣਕਾਰੀ ਦਿਓ।   10

B.A./B.Sc. 1st Semester

COMPUTER SCIENCE

(Computer Fundamentals & PC Software)

Time Allowed—3 Hours]   [Maximum Marks—75

Note :—Attempt **five** questions in all, by selecting at least **one** question from each section.

SECTION—A

1. (a) Explain functional units of a computer. How computer and communication are interrelated ?

    (b) What is meant by batch oriented, online and real time applications ?   9,6

2. What is primary storage ? How does it differ from secondary storage ? Write briefly on the following storage devices : magnetic disc and floppy. Also discuss how data representation takes place on these.   15

SECTION—B

3. Explain the characteristics and functioning of the following : Mouse, MICR, OCR, portable terminals and vision input system.   15

4. Write briefly on the following : Printer, Plotter, Voice Response Units, Screen Assisted Data Entry.

                                                                  6,3,3,3

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SECTION—C

5. (a) Why window based operating system is popular amongst common people ?

   (b) Write the difference between the following w.r.t. Windows Operating System :

      (i) Folder and shortcut

      (ii) Minimize and close.   11,4

6. Discuss the uses of the following features of Windows : Start Menu, Recycle Bin, My Computer and Windows Explorer, function of a Taskbar.   15

SECTION—D

7. Discuss the following features of MS-Word :

   (i) Header and footer

   (ii) Page Setup

   (iii) Mail-Merge with suitable illustration.   4,3,8

8. (a) Discuss briefly the various views available in MS-PowerPoint.

   (b) Write briefly on the following :

      (i) Template and wizard

      (ii) Slide Show.   10,5

Exam. Code : 103201
Subject Code : 1009

B.A./B.Sc. 1st Semester
COMPUTER APPLICATIONS
(Computer Fundamentals & PC Software)

Time Allowed—3 Hours]   [Maximum Marks—75

Note :— Attempt any **FIVE** questions, selecting at least **ONE** question from each Section. All questions carry equal marks.

SECTION—A

1. (a) Draw a block diagram of a computer and discuss the functions of its components.

    (b) Briefly discuss the uses of computers in modern society.

2. What is Secondary Memory ? How is it different from Primary Memory ? Discuss the various storage devices in detail.

SECTION—B

3. Write short notes on the following :—

    (a) My Computer

    (b) Recycle bin

    (c) Network Neighborhood.

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4. (a) What are various ways to create an icon on the Desktop ? Explain. How icons on desktop are different from icons appearing in the Microsoft Office toolbar ?

(b) What is Folder and Shortcut in Windows Vista ? How folders and shortcuts are created in Windows Vista ?

SECTION—C

5. (a) What is the use of Headers and Footers in a Word document ? How page numbers are inserted in headers and footers ?

(b) What are Tables in MS Word ? Explain how a row and column can be added to and deleted from a table, considering that table already had some data values stored in it.

6. Write the procedure of creating printing labels using Mail Merge facility.

SECTION—D

7. Discuss the following types of Views in PowerPoint :

(a) Slide view

(b) Slide sorter view

(c) Notes view

(d) Outline view.

8. Explain in detail the presentation capabilities of PowerPoint package, giving special reference to graphics.

Exam. Code   : 103201
Subject Code :   1015

B.A./B.Sc. 1st Semester
ECONOMICS
(Micro Economics)

Time Allowed—3 Hours]   [Maximum Marks—100

Note :– Attempt **FIVE** questions, selecting at least **ONE** question from each Section. All questions carry equal marks.

SECTION—A

1. (a) Critically examine Scarcity definition of economics.
                                                          10

    (b) Explain three methods of measuring price elasticity of demand.   10

2. Explain the meaning of an Indifference curve. Discuss consumer equilibrium with the help of Indifference curves.   20

SECTION—B

3. State and explain the law of variable proportions. In which stage of law does a typical business firm operate ?
                                                          20

4. What are the different concepts related to costs ? Explain the shape of long rung average cost curve according to traditional theory.   20

SECTION—C

5. What is perfect competition ? What are its characteristics ? How is price of a commodity determined under perfect competition ?   20

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                      जालन्धर शहर

6. What is meant by monopolistic competition ? Explain the equilibrium of firm and Group determined with selling cost. 20

SECTION—D

7. Critically examine the neo-classical marginal productivity theory of distribution. 20

8. (a) 'Rent is surplus of actual earning over transfer earnings.' Discuss. 10

(b) Explain briefly loanable funds theory of interest. 10

(Punjabi Version)

ਨੋਟ : ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਘੱਟੋ-ਘੱਟ **ਇੱਕ** ਪ੍ਰਸ਼ਨ ਦੀ ਚੋਣ ਕਰਦੇ ਹੋਏ **ਪੰਜ** ਪ੍ਰਸ਼ਨ ਕਰੋ। ਸਾਰੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।

ਭਾਗ—ੳ

1. (ੳ) ਅਰਥ-ਸ਼ਾਸਤਰ ਦੀ ਦੁਰਲਭਤਾ ਪਰਿਭਾਸ਼ਾ ਦਾ ਆਲੋਚਨਾਤਮਕ ਪਰੀਖਣ ਕਰੋ। 10

(ਅ) ਮੰਗ ਦੀ ਕੀਮਤ ਲੋਚ ਨੂੰ ਮਾਪਣ ਦੇ ਤਿੰਨ ਤਰੀਕਿਆਂ ਦੀ ਵਿਆਖਿਆ ਕਰੋ। 10

2. ਇੱਕ ਉਦਾਸੀਨਤਾ ਵਕਰ ਦੇ ਅਰਥ ਦੀ ਵਿਆਖਿਆ ਕਰੋ। ਉਦਾਸੀਨਤਾ ਵਕਰ ਦੀ ਮਦਦ ਨਾਲ ਉਪਭੋਗਤਾ ਸੰਤੁਲਨ ਉਪਰ ਚਰਚਾ ਕਰੋ। 20

ਭਾਗ—ਅ

3. ਪਰਿਵਰਤਨਸ਼ੀਲ ਅਨੁਪਾਤ ਦੇ ਕਾਨੂੰਨ ਨੂੰ ਲਿਖੋ ਅਤੇ ਵਿਆਖਿਆ ਕਰੋ। ਕਾਨੂੰਨ ਦੇ ਕਿਹੜੇ ਚਰਣ ਵਿੱਚ ਇੱਕ ਪ੍ਰਕਾਰਾਤਮਕ ਵਪਾਰਕ ਫਰਮ ਸੰਚਲਿਤ ਹੁੰਦੀ ਹੈ ? 20

4. ਲਾਗਤਾਂ ਨਾਲ ਸੰਬੰਧਿਤ ਵੱਖ-ਵੱਖ ਧਾਰਨਾਵਾਂ ਕੀ ਹਨ ? ਪਾਰੰਪਰਿਕ ਸਿਧਾਂਤ ਦੇ ਅਨੁਪਾਤ ਲੰਮੇ ਸਮੇਂ ਤਕ ਔਸਤ ਲਾਗਤ ਵਕਰ ਦੇ ਆਧਾਰ ਦੀ ਵਿਆਖਿਆ ਕਰੋ। 20

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ਭਾਗ—ੲ

5. ਸੰਪੂਰਨ ਮੁਕਾਬਲਾ ਕੀ ਹੈ ? ਇਸ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਕੀ ਹਨ ? ਸੰਪੂਰਨ ਮੁਕਾਬਲੇ ਵਿੱਚ ਵਸਤੁ ਦਾ ਮੂਲ ਕਿਵੇਂ ਨਿਰਧਾਰਤ ਕੀਤਾ ਜਾ ਸਕਦਾ ਹੈ ? 20

6. ਏਕਾਧਿਕਾਰਵਾਦੀ ਮੁਕਾਬਲਾ ਕੀ ਹੈ ? ਵਿੱਕਰੀ ਲਾਗਤ ਦੇ ਨਾਲ ਨਿਰਧਾਰਿਤ ਫਰਮ ਅਤੇ ਸਮੂਹ ਦੇ ਸੰਤੁਲਨ ਦੀ ਵਿਆਖਿਆ ਕਰੋ। 20

ਭਾਗ—ਸ

7. ਵੰਡ ਦੇ ਨਵ-ਸ਼ਾਸਤਰੀ ਸੀਮਾਂਤ ਉਤਪਾਦਕਤਾ ਸਿਧਾਂਤ ਦਾ ਆਲੋਚਨਾਤਮਕ ਪਰੀਖਣ ਕਰੋ। 20

8. (ੳ) ਕਿਰਾਇਆ ਹਸਤਾਂਤਰਣ ਆਮਦਨ ਉਪਰ ਵਾਸਤਵਿਕ ਆਮਦਨ ਦਾ ਅਧਿਸ਼ੇਸ਼ ਹੈ। ਚਰਚਾ ਕਰੋ। 10

(ਅ) ਵਿਆਜ ਦੇ ਕਰਜੇ ਯੋਗ ਪੈਸਾ ਸਿਧਾਂਤ ਦੀ ਸੰਖਿਪਤ ਵਿਆਖਿਆ ਕਰੋ। 10

(Hindi Version)

नोट :— प्रत्येक भाग में से कम से कम एक प्रश्न का चयन करते हुए **पांच** प्रश्न करो। सभी प्रश्नों के अंक समान हैं।

भाग—क

1. (क) अर्थशस्त्र की दुर्लभता परिभाषा का आलोचनात्मक परीक्षण करें। 10

(ख) मांग की कीमत लोच को मापने के तीन तरीकों की व्याख्या करें। 10

2. एक उदासीनता वक्र के अर्थ की व्याख्या करें। उदासीनता वक्र की मदद से उपभोक्ता संतुलन पर चर्चा करें। 20

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भाग—ख

3. परिवर्तनीय अनुपात के कानून को लिखें तथा व्याख्या करें। कानून के किस चरण में एक प्रकारात्मक व्यापारिक फर्म संचालित होती है ?   20

4. लागत से संबंधित विभिन्न अवधारणाएं क्या हैं ? पारंपरिक सिद्धांत के अनुसार लंबे समय तक औसत लागत वक्र के आकार की व्याख्या करें।   20

भाग—ग

5. सही प्रतियोगिता क्या है ? इसकी विशेषताएं क्या हैं ? सही प्रतिस्पर्धा के तहत वस्तु का मूल्य कैसे निर्धारित किया जाता है ?   20

6. एकाधिकारवादी प्रतिस्पर्धा का क्या अर्थ है ? बिक्री लागत के साथ निर्धारित फर्म तथा समूह के संतुलन की व्याख्या करें।   20

भाग—घ

7. वितरण के नव-शास्त्रीय सीमांत उत्पादकता सिद्धांत का आलोचनात्मक परीक्षण करें।   20

8. (क) 'किराया हस्तांतरण आय पर वास्तविक आय का अधिशेष है।' चर्चा करें।   10

   (ख) ब्याज के ऋण योग्य धन सिद्धांत की संक्षिप्त व्याख्या करें।   10

Exam. Code : 103201
Subject Code: 1020

B.A./B.Sc. 1st Semester

HINDI ELECTIVE

(Adhunik Kavita, Vyakaran Tatha Anuvad)

Time Allowed—3 Hours]   [Maximum Marks—100

नोट :— यह प्रश्नपत्र **चार** भागों में विभाजित है। निर्देशानुसार उत्तर दीजिए। निम्नलिखित प्रश्नों में से कोई **पाँच** प्रश्न करें। प्रत्येक भाग में से कम से कम एक प्रश्न करना अनिवार्य है।

भाग—एक

निम्नलिखित पद्यांशों में से किन्हीं **दो** पद्यांशों की सप्रसंग व्याख्या करें :—

(i)   इक भाषा इक जीव एक, मति सब घर के लोग।

तवै बनत है सबन सों, मिटत मूढ़ता सोग।।

और एक अति लाभ यह, या में प्रगट लखात।

निज भाषा में कीजिए, जो विद्या की बात।।

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(ii) धूमधाम से साजबाज से, वे मन्दिर में आते हैं।

मुक्तामणि बहुमूल्य वस्तुएं, लाकर तुम्हें चढ़ाते हैं।।

मैं ही हूँ गरीबनी ऐसी, जो कुछ साथ नहीं लायी।

फिर भी साहस कर मन्दिर में, पूजा करने को आयी।।

(iii) होता सुख का क्या मूल्य, जो न दुःख रहता ?

प्रिय हृदय सदय हो तपस्ताप क्यों सहता ?

मेरे नयनों से नीर न यदि यह बहता

तो शुष्क प्रेम की बात कौन फिर कहता ?

(iv) पशु नहीं, वीर तुम,

समर शूर, कूर नहीं,

काल-चक्र में हो दबे

आज तुम राज कंवर। ... समर

सरताज। 2×10=20

भाग—दो

I. निम्नलिखित क्रिया (शब्दों) से भाववाचक संज्ञा बनाएं :—

2×10=20

(i) देखना (ii) सींचना

(iii) दिखाना (iv) भिड़ना

(v) तैरना (vi) गिनना

(vii) गाना (viii) मिलना

(ix) जलना (x) मनाना

II. निम्नलिखित शब्दों से विशेषण शब्द बनाएं :— 2×10=20

(i) प्रांत (ii) मुख

(iii) तू (iv) कथन

(v) यह (vi) दिन

(vii) समाज (viii) भूगोल

(ix) ज्ञान (x) लेख

भाग—तीन

I. अनुवाद का अर्थ स्पष्ट करते हुए अनुवाद की उपयोगिता सिद्ध कीजिए।

II. पत्र का सामान्य परिचय देते हुए पत्र के प्रकारों का उल्लेख करें।

भाग—चार

I. निम्नलिखित शब्दों का हिन्दी में अनुवाद करें :— 2×10=20

(i) Acceptance (ii) Illegal

(iii) Junior (iv) Estimate

(v) Uniformity (vi) Secretary

(vii) Ratio (viii) Neutral

(ix) Minor (x) Census

II. (क) भाई के विवाह के अवसर पर अपने मित्र को निमंत्रण-पत्र लिखें।

(ख) मोहल्ले की सफाई के लिए नगर-निगम के मुख्य अधिकारी को प्रार्थना-पत्र लिखें। 2×10=20

Exam. Code : 103201
Subject Code : 1021

B.A./B.Sc. 1st Semester

HISTORY

[History of India (C. 1000)]

Time Allowed—3 Hours]   [Maximum Marks—100

Note :— Section A : Candidates attempt **eight** questions out
of **ten**, carrying **2** marks each.

(8×2=16)

Section B : Candidates attempt **six questions** out
of **eight**, but attempt one question from
each Unit, (compulsory). Carrying
14 marks each.   (6×14=84)

SECTION—A

1. Write the importance of the 'Rigveda'.

2. Write the social life of the people during Vedic era.

3. Write four causes of downfall of ancient Harrapa civilization.

4. Write a note on 'Sangam' literature.

5. Note on importance of coins as a source of history.

6. Note on 'Ashvamedha Yaga'.

कन्या महा विद्यालय पुस्तकालय

जालन्धर शहर

7. In Buddhism, what is 'Ashtamarga'.

8. Who was called, 'The Indian Napoleon and why ?

9. Write the names of Chandra Gupta's provinces.

10. What do you know about Chola administration.

SECTION—B

UNIT—I

1. Write the written sources of Ancient Indian History and give its importance.

2. Explain the town planning its importance and downfall of the Ancient Indian Civilization (Harrapa).

UNIT—II

3. Write the social institutions : family, Verna and caste system in later vedic era.

4. Explain the life, carrier and teachings of 'Lord Mahavira' in Jainnism.

UNIT—III

5. Write the administration and taxation system during the Mauryan period.

6. Explain the revenue system, development in field of science and technology during Samundera Gupta's role.

UNIT—IV

7. Write about the polity, administration and religious policy of Raja Harshvardhna.

8. Explain the origin of Rajput's theories and social religious life of the people.

(Punjabi Version)

ਨੋਟ :— ਭਾਗ ੳ : ਪ੍ਰੀਖਿਆਰਥੀ ਦਸ ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚੋਂ ਕੋਈ ਅੱਠ ਪ੍ਰਸ਼ਨ ਕਰਨ। ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ 2 ਅੰਕ ਹਨ।

(8×2=16)

ਭਾਗ ਅ : ਪ੍ਰੀਖਿਆਰਥੀ ਅੱਠ ਪ੍ਰਸ਼ਨਾਂ ਵਿੱਚੋਂ ਛੇ ਪ੍ਰਸ਼ਨ ਕਰਨ, ਪਰ ਹਰੇਕ ਯੂਨਿਟ ਵਿੱਚੋਂ ਇੱਕ ਪ੍ਰਸ਼ਨ ਕਰਨਾ ਲਾਜ਼ਮੀ ਹੈ। ਹਰ ਪ੍ਰਸ਼ਨ ਦੇ 14 ਅੰਕ ਹਨ।

(6×14=84)

ਭਾਗ—ੳ

1. ਰਿਗਵੈਦ ਦੀ ਮਹੱਤਤਾ ਲਿਖੋ।

2. ਵੈਦਿਕ ਕਾਲ ਵਿੱਚ ਲੋਕਾਂ ਦਾ ਸਮਾਜਿਕ ਜੀਵਨ ਬਾਰੇ ਚਾਨਣਾ ਪਾਉ।

3. ਪ੍ਰਾਚੀਨ ਹੜੁਪਾ ਸਭਿਅਤਾ ਦੇ ਪਤਨ ਦੇ ਚਾਰ ਕਾਰਣ ਲਿਖੋ।

4. 'ਸੰਗਮ' ਸਹਿਤ ਉੱਤੇ ਇੱਕ ਨੋਟ ਲਿਖੋ।

5. ਪ੍ਰਾਚੀਨ ਇਤਿਹਾਸਿਕ ਸੋਮੇ ਦੇ ਰੂਪ ਵਿੱਚ ਸਿਕਿਆਂ ਦੇ ਮਹੱਤਵ ਉੱਤੇ ਨੋਟ ਲਿਖੋ।

6. 'ਅਸ਼ਵਮੇਧ ਯੱਗ' ਤੇ ਨੋਟ ਲਿਖੋ।

7. ਭੂਗੋਲਿਕ ਸਥਿਤੀ 'ਅਸ਼ਟਮਾਰਗ' ਤੇ ਨੋਟ ਲਿਖੋ।

8. ਪ੍ਰਾਚੀਨ ਕਾਲ ਸਮੇਂ 'ਭਾਰਤ ਦਾ ਨੇਪੋਲੀਅਨ' ਕਿਸਨੂੰ ਤੇ ਕਿਉਂ ਕਿਹਾ ਜਾਦਾ ਸੀ ?

9. ਚੰਦਰਗੁਪਤ ਮੌਰਿਆ ਦੇ ਪ੍ਰਾਂਤਾਂ ਦੇ ਨਾਂ ਲਿਖੋ।

10. 'ਚੋਲ ਪ੍ਰਸ਼ਾਸਨ' ਬਾਰੇ ਆਪ ਕੀ ਜਾਣਦੇ ਹੋ ?

ਭਾਗ—ਅ

ਯੂਨਿਟ–I

1. ਪ੍ਰਾਚੀਨ ਭਾਰਤੀ ਇਤਿਹਾਸ ਦੇ ਸੋਮਿਆਂ ਦਾ ਅਤੇ ਇਹਨਾਂ ਦਾ ਕੀ ਮਹੱਤਵ ਸੀ, ਖੋਲ ਕੇ ਲਿਖੋ।

2. ਪ੍ਰਾਚੀਨ ਭਾਰਤੀ ਸਭਿਅਤਾ ਹੜੱਪਾ ਦੀ ਖੋਜ, ਨਗਰ ਯੋਜਨਾ ਤੇ ਪਤਨ ਦੇ ਕਾਰਣਾਂ ਦਾ ਵਰਣਨ ਕਰੋ।

ਯੂਨਿਟ–II

3. ਉੱਤਰ ਵੈਦਿਕ ਕਾਲ ਸਮੇਂ ਸਮਾਜਿਕ ਸੰਸਥਾਵਾਂ : ਪਰਿਵਾਰ, ਵਰਣ ਤੇ ਜਾਤੀ ਪ੍ਰਣਾਲੀ ਬਾਰੇ ਵਰਣਨ ਕਰੋ।

4. ਜੈਨ-ਮਤ ਅਨੁਸਾਰ 'ਭਗਵਾਨ ਮਹਾਵੀਰ' ਦਾ ਜੀਵਨ, ਚਰਿਤਰ ਤੇ ਸਿੱਖਿਆਵਾਂ ਦਾ ਵਰਣਨ ਕਰੋ।

ਯੂਨਿਟ–III

5. ਮੌਰਿਆ ਰਾਜ ਸਮੇਂ ਪ੍ਰਸ਼ਾਸਨ ਤੇ ਟੈਕਸ ਪ੍ਰਣਾਲੀ ਦਾ ਖੋਲ ਕੇ ਵਰਣਨ ਕਰੋ।

6. ਸਮੁਦਰ ਗੁਪਤ ਰਾਜ ਸਮੇਂ ਰਾਜ ਦੀ ਲਗਾਨ ਪ੍ਰਣਾਲੀ ਅਤੇ ਵਿਗਿਆਨਿਕ ਤੇ ਤਕਨੀਕੀ ਉੱਨਤੀ ਬਾਰੇ ਚਾਨਣਾ ਪਾਉ।

ਯੂਨਿਟ–IV

7. ਰਾਜਾ ਹਰਸ਼ਵਰਧਨ ਕਾਲ ਵਿੱਚ ਰਾਜਨੀਤੀ, ਪ੍ਰਸ਼ਾਸਨਿਕ ਪ੍ਰਣਾਲੀ ਤੇ ਧਾਰਮਿਕ ਨੀਤੀ ਦਾ ਵਿਸਤਾਰ ਸਹਿਤ ਵਰਣਨ ਕਰੋ।

8. ਰਾਜਪੂਤਾਂ ਦੀ ਉੱਤਪੱਤੀ ਸੰਬੰਧੀ ਸਿਧਾਂਤਾਂ ਦਾ, ਲੋਕਾਂ 'ਚ ਸਮਾਜਿਕ ਅਤੇ ਧਾਰਮਿਕ ਜੀਵਨ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।

(Hindi Version)

नोट :— भाग क : परीक्षार्थी कुल दस प्रश्नों में से कोई आठ प्रश्न करें। प्रत्येक प्रश्न के 2 अंक हैं। (8×2=16)

भाग ख : परीक्षार्थी कुल आठ प्रश्नों में से छः प्रश्न करें परन्तु प्रत्येक यूनिट में से एक प्रश्न करना अनिवार्य है। प्रत्येक प्रश्न 14 अंक हैं। (6×14=84)

भाग—क

1. ऋग्वेद का महत्व लिखो।

2. वैदिक काल में लोगों का सामाजिक जीवन लिखो।

3. प्राचीन काल में हड़प्पा सभ्यता के पतन के कोई चार कारण लिखें।

4. 'संगम' साहित्य पर नोट।

5. इतिहास के स्रोत के रूप में 'सिक्कों' की महत्ता पर नोट।

7. बुद्धमत के 'अष्टमार्ग' पर नोट।

8. प्राचीन काल में भारत का नैपोलियन किसको और क्यों कहा जाता था ?

9. चन्द्रगुप्त मौर्य के प्रान्तों के नाम लिखो।

10. चौल प्रशासन के बारे आप क्या जानते हो ?

भाग—ख

यूनिट–I

1. प्राचीन भारतीय इतिहास के स्रोतों का वर्णन, उनके महत्व का विस्तार सहित वर्णन करो।

2. प्राचीन भारतीय सभ्यता (हड़प्पा) समय नगर योजना और पतन के कारणों का विस्तृत वर्णन करो।

यूनिट–II

3. उत्तर वैदिक काल में समाजिक संस्थाएं जैसे : परिवार, वर्ण और जाति प्रणाली का विस्तृत वर्णन करो।

4. भगवान महावीर का जीवन, चरित्र और शिक्षाओं का विस्तृत वर्णन करो।

यूनिट–III

5. मौर्य कालीन प्रशासन और टैक्स प्रणाली का विस्तार सहित वर्णन करो।

6. समुद्रगुप्त राज्य में राजनीति, लगान प्रणाली, वैज्ञानिक और तकनीकी उन्नति की व्याख्या करें।

यूनिट–IV

7. राजा हर्षवर्धन राज्य में राजनीति, प्रशासनिक प्रणाली और धार्मिक नीति का वर्णन करो।

8. राजपूतों की उत्पत्ति संबंधी सिद्धांतों का और लोगों के सामाजिक एवं धार्मिक जीवन का वर्णन करो।

B.A./B.Sc. 1st Semester

MATHEMATICS

Paper—I (Algebra)

Time Allowed—Three Hours]   [Maximum Marks—50

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. All questions carry equal marks.

SECTION—A

1. (a) Define the rank of a matrix. Compute the rank of

    the matrix $A = \begin{bmatrix} 1 & 5 & 3 \\ -1 & 3 & 5 \\ 1 & 0 & -2 \end{bmatrix}$ by reducing

    it to an equivalent matrix of the form

    $PAQ = \begin{bmatrix} I_r & 0 \\ 0 & 0 \end{bmatrix}$.

   (b) Find the row rank of the matrix :

   $$A = \begin{bmatrix} 1 & 2 & -1 & 3 \\ 4 & 1 & 2 & 1 \\ 3 & -1 & 1 & 2 \\ 1 & 2 & 0 & 1 \end{bmatrix}.$$

2. (a) State condition under which a set of homogeneous equations possess a (i) trivial solution or (ii) non-trivial solution, why ?

(b) If $A = \begin{bmatrix} 2 & 1 & 1 \\ 1 & 1 & 1 \\ 3 & 1 & 1 \end{bmatrix}$, $B = \begin{bmatrix} b_1 \\ b_2 \\ b_3 \end{bmatrix}$, then show that

the system $AX = B$ is consistent if and only if

$b_3 - 2b_1 + b_2 = 0$ where $X = \begin{bmatrix} x \\ y \\ z \end{bmatrix}$.

SECTION—B

3. (a) Prove that any two characteristic vectors corresponding to two distinct characteristic roots of a unitary matrix are orthogonal.

(b) Determine eigen values and the corresponding eigen-vectors for the matrix $A = \begin{bmatrix} 1 & 0 & -1 \\ 1 & 2 & 1 \\ 2 & 2 & 3 \end{bmatrix}$.

4. (a) Verify Cayley Hamilton theorem for the matrix

$A = \begin{bmatrix} 1 & \sqrt{2} & 0 \\ \sqrt{2} & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ and find A^{-1}.

(b) Write down the quadratic form corresponding to the symmetric matrix :

$\begin{bmatrix} 0 & 1 & 2 & 3 \\ 1 & 2 & 3 & 4 \\ 2 & 3 & 4 & 5 \\ 3 & 4 & 5 & 6 \end{bmatrix}$.

SECTION—C

5. (a) Define congruent matrices and explain its fundamental properties.

(b) Show that if A is any n-rowed non-zero symmetric matrix of rank r over a field F, then there exists an n-rowed non-singular matrix P over F, such

that $P'AP = \begin{bmatrix} A_1 & 0 \\ 0 & 0 \end{bmatrix}$, where A_1 is a non-

singular r-rowed diagonal matrix over F and each O, is a zero matrix of the appropriate type.

6. (a) Reduce the following to canonical form and find the rank and index :

$$x^2 - 2y^2 + 3z^2 - 4yz + 5zx.$$

(b) Show that the form $x_1^2 + 2x_2^2 + 3x_3^2 + 2x_2x_3 - 2x_3x_1 + 2x_1x_2$

is indefinite and find two set of values of x_1, x_2, x_3 for which the form assumes positive and negative values.

SECTION—D

7. (a) If α, β, γ are the roots of the equation $2x^3 - 6x^2 + 3x + k = 0$ such that $\alpha = 2(\beta + \gamma)$, find k and solve the equation.

(b) If α, β, γ, δ are the roots of the equation $x^4 + ax^2 + bx + c = 0$ find the value of

$$\sum \frac{\beta + \gamma - \delta - \alpha}{2\alpha^2}$$

8. (a) If $q > 0$, $r > 0$ then prove that the cubic $x^3 + qx + r = 0$ has one negative and two imaginary roots.

(b) Solve by Ferrari's method :

$$x^4 - 2x^3 - 5x^2 + 10x - 3 = 0.$$

Exam. Code : 103201

Subject Code : 1029

B.A./B.Sc. 1ˢᵗ Semester

MATHEMATICS

Paper—II

(Calculus & Trigonometry)

Time Allowed—Three Hours]   [Maximum Marks—50

Note :— Attempt **FIVE** questions in all, selecting at least **ONE** question from each section. The **Fifth** question may be attempted from any section.

SECTION—A

1. (a) If A_1 and A_2 are two bounded subsets of R, then show that the set :

$A_1 + A_2 = \{x + y : x \in A_1 \text{ and } y \in A_2\}$ is bounded. Further if $u_1 = \text{Sup}.A_1$, $u_2 = \text{Sup}.A_2$ then prove that $\text{Sup}.(A_1 + A_2) = u_1 + u_2$.

   (b) For what choice of a and b is the function :

$$f(x) = \begin{cases} 3, & \text{if } x \leq 2 \\ ax^2 + bx + 1, & \text{if } 2 < x < 3 \\ 7 - ax, & \text{if } x \geq 3 \end{cases}$$

continuous for all x.   5,5

2. (a) Prove that for given a > 0 and b ∈ R, there exist a natural number n such that na > b.

   (b) Define uniform continuity and show that $f(x) = x^2$ is uniformly continuous in [0, 1].   5,5

40(2118)/DAG-6493   1   (Contd.)

SECTION—B

3. (a) If $y = \dfrac{x\sqrt{x^2+a^2}}{2} + \dfrac{a^2 \sinh^{-1}\frac{x}{a}}{2}$, then show that

$$\left(\frac{dy}{dx}\right)^2 - x^2 = a^2.$$

(b) If $y = e^{m\sin^{-1}x}$, then prove that :

$(1 - x^2)y_{n+2} - (2n + 1)xy_{n+1} = (m^2 + n^2)y_n.$

Also deduce that $\underset{x\to 0}{\text{Lim}} \dfrac{y_{n+2}}{y_n} = m^2 + n^2.$ 5,5

4. (a) Prove that :

$$\underset{x\to 0}{\text{Lim}} \left(\frac{\sin x}{x}\right)^{\frac{1}{x}} = 1.$$

(b) State and prove Taylor's theorem with Lagrange's form of remainder after n terms.   5,5

SECTION—C

5. (a) If $\cos(\theta + i\phi) = r(\cos\alpha + i\sin\alpha)$, then prove that

$$\phi = \frac{1}{2}\log\frac{\sin(\theta - \alpha)}{\sin(\theta + \alpha)}, \text{ where } \alpha, \theta, \phi, r \in R.$$

(b) Apply De-Moivre's theorem to find an equation whose roots are the nth power of the roots of the equation $x^2 - 2x\cos\theta + 1 = 0$.   5,5

6. (a) If $x + iy = \cosh(u + iv)$, then show that

$$\frac{x^2}{\cosh^2 u} + \frac{y^2}{\sinh^2 u} = 1 \text{ and } \frac{x^2}{\cos^2 v} + \frac{y^2}{\sin^2 v} = 1.$$

(b) Solve $z^7 = 1$ and prove that the sum of nth power of its roots is zero or 7 according as n is not or is a multiple of 7.   5,5

SECTION—D

7. (a) If $i^{\alpha + i\beta} = \alpha + i\beta$, then prove that :

$$\alpha^2 + \beta^2 = e^{-(4n+1)\beta\pi}, n \in Z.$$

(b) Express $\cos 5\theta$ and $\sin 5\theta$ in terms of powers of $\cos\theta$ and $\sin\theta$ respectively.   5,5

8. (a) Sum to n terms the series :

$\cos\theta\sin\theta + \cos^3\theta\sin 3\theta + \cos^5\theta\sin 5\theta + \dots\dots n$ terms.

(b) Use Gregory series to prove that :

$$1 + \frac{1}{3} - \frac{1}{5} - \frac{1}{7} + \dots\dots = \frac{\pi}{2\sqrt{2}}.$$ 5,5

Exam. Code　　:　103201
Subject Code　:　1035

B.A./B.Sc. 1st Semester

PSYCHOLOGY

(Basic Psychological Processes-I)

Time Allowed—3 Hours]　　　　　[Maximum Marks—75

Note :—Attempt **FIVE** questions in all. Select at least **ONE** question from each Section. **Fifth** question may be attempted from any Section. All questions carry equal marks.

SECTION–A

1. Define Psychology. Explain Historical Background of Psychology.

2. Write note on Psycho-Analytical School of Psychology.

SECTION–B

3. Define Interview. Explain Interview Method of Psychology.

4. Define Psychological Test. What are Ethical Issues in Psychological Testing ?

SECTION–C

5. Define Learning. Write note on observational learning.

6. Define conditioning. Explain Classical conditioning and Instrumental conditioning with the help of typical experiments.

SECTION–D

7. Define Intelligence. Discuss Theories of Intelligence given by Gardner and Sternberg.

Calculate Mean, Median and Mode of the following data.

Class Interval	Frequency
195—199	1
190—194	2
185—189	4
180—184	5
175—179	8
170—174	10
165—169	6
160—164	4
155—159	2
150—154	2
145—149	3
140—144	1
	N = 48

(Punjabi Version)

ਨੋਟ : ਕੁੱਲ **ਪੰਜ** ਪ੍ਰਸ਼ਨ ਕਰਨੇ ਹਨ। ਹਰ ਇੱਕ ਭਾਗ ਵਿੱਚੋਂ **ਇੱਕ-ਇੱਕ** ਪ੍ਰਸ਼ਨ ਚੁਣੋ। **ਪੰਜਵਾਂ** ਪ੍ਰਸ਼ਨ ਕਿਸੇ ਵੀ ਭਾਗ ਵਿੱਚੋਂ ਕਰ ਸਕਦੇ ਹੋ। ਸਾਰੇ ਪ੍ਰਸ਼ਨਾਂ ਦੇ ਅੰਕ ਬਰਾਬਰ ਹਨ।

ਭਾਗ—ੳ

1. ਮਨੋਵਿਗਿਆਨ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਉ। ਮਨੋਵਿਗਿਆਨ ਦੇ ਇਤਿਹਾਸਕ ਪਿਛੋਕੜ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।

2. ਮਨੋਵਿਗਿਆਨ ਦੇ ਮਨੋਵਿਸ਼ਲੇਸ਼ਨ ਦੇ ਸਕੂਲ ਉਪਰ ਨੋਟ ਲਿਖੋ।

ਭਾਗ—ਅ

3. ਇੰਟਰਵਿਉ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਉ। ਮਨੋਵਿਗਿਆਨ ਦੀ ਇੰਟਰਵਿਉ ਵਿਧੀ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।

4. ਮਨੋਵਿਗਿਆਨਕ ਟੈਸਟ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਉ। ਮਨੋਵਿਗਿਆਨਕ ਟੈਸਟਾਂ ਨਾਲ ਸੰਬੰਧਤ ਨੈਤਿਕ ਮੁੱਦੇ ਕੀ ਹਨ ?

ਭਾਗ—ੲ

5. ਸਿੱਖਣ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਉ। ਨਿਰੀਖਣ ਦੁਆਰਾ ਸਿੱਖਣ ਤੇ ਨੋਟ ਲਿਖੋ।

6. ਅਨੁਕੂਲਣ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਉ। ਪ੍ਰਯੋਗਾਂ ਦੀ ਸਹਾਇਤਾ ਨਾਲ ਪ੍ਰਾਚੀਨ ਅਨੁਕੂਲਣ ਅਤੇ ਕਾਰਨ-ਮੂਲਕ ਅਨੁਕੂਲਣ ਦੀ ਵਿਆਖਿਆ ਕਰੋ।

ਭਾਗ—ਸ

7. ਬੁੱਧੀ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦਿਉ। ਗਾਰਡਨਰ ਅਤੇ ਸਟਰਨਬਰਗ (Gardner and Sternberg) ਦਵਾਰਾ ਦਿੱਤੇ ਬੁੱਧੀ ਦੇ ਸਿਧਾਂਤਾਂ ਦੀ ਚਰਚਾ ਕਰੋ।

8. ਹੇਠ ਦਿੱਤੇ ਡੈਟਾ ਦਾ Mean, Median ਅਤੇ Mode ਕੱਢੋ :

ਵਰਗ ਅੰਤਰਾਲ	ਬਾਰੰਬਾਰਤਾ
195—199	1
190—194	2
185—189	4
180—184	5
175—179	8
170—174	10
165—169	6
160—164	4
155—159	2
150—154	2
145—149	3
140—144	1
	N = 48

(Hindi Version)

नोट :— सभी में से **पांच** प्रश्न करें। प्रत्येक भाग में से कम से कम एक प्रश्न करें। **पांचवां** प्रश्न किसी भी भाग में से किया जा सकता है। सभी प्रश्नों के अंक समान हैं।

भाग—क

1. मनोविज्ञान को परिभाषित करें। मनोविज्ञान की ऐतिहासिक पृष्ठभूमि की व्याख्या करें।

2. मनोविज्ञान के विश्लेषणात्मक स्कूल पर नोट लिखें।

<div align="center">भाग—ख</div>

3. साक्षात्कार को परिभाषित करें। मनोविज्ञान की साक्षात्कार विधि की व्याख्या करें।

4. मनोवैज्ञानिक परीक्षण को परिभाषित करें। मनोवैज्ञानिक परीक्षण में नैतिक मुद्दे क्या हैं ?

<div align="center">भाग—ग</div>

5. सीखने को परिभाषित करें। निरीक्षण द्वारा सीखने पर एक नोट लिखें।

6. अनुकूलन को परिभाषित करें। प्रतिरूपी प्रयोगों की सहायता से शास्त्रीय अनुकूलन तथा यान्त्रिक अनुकूलन की व्याख्या करें।

<div align="center">भाग—घ</div>

7. बुद्धि को परिभाषित करें। गार्डनर तथा स्टर्नबर्ग द्वारा दिए गए बुद्धि के सिद्धांतों पर चर्चा करें।

8. निम्नलिखित डाटा में से माध्य, माध्यिका तथा बहुलक की गणना करें :

वर्ग अन्तराल	बारंबारता
195—199	1
190—194	2
185—189	4
180—184	5
175—179	8
170—174	10
165—169	6
160—164	4
155—159	2
150—154	2
145—149	3
140—144	1
	N = 48

G-12-2018

Exam. Code : 103201
Subject Code : 1037

B.A./B.Sc. 1ˢᵗ Semester

QUANTITATIVE TECHNIQUES—I

Time Allowed—3 Hours]   [Maximum Marks—100

Note :— There are **eight** questions, **two** from each of Sections A to D. Candidates are required to attempt **five** questions, selecting at least **one** question from each Section. **Fifth** question may be attempted from any Section.

SECTION—A

1.   (i)   Solve the equation, $\dfrac{3}{x}+\dfrac{2}{y}+1=\dfrac{1}{x}+\dfrac{3}{y}=10$.   6

     (ii)   Solve $\dfrac{a}{x-b}+\dfrac{a}{x-a}=2$.   7

     (iii) Solve $3^x + 3^{-x} - 2 = 0$.   7

2.   (i)   Find sum of 12 terms of an AP where n^{th} term is 5n+2.   6

     (ii)   How many terms of the series will amount to $39+13\sqrt{3}$?

          $\sqrt{3}+3+3\sqrt{3}...$ 6

29(2118)/DAG-7538   1   (Contd.)

(iii) Sum of three numbers in GP is 19 and their product is 216. Find the numbers. 8

SECTION—B

3. (i) Find the equation of a straight-line which passes through the point (−1, 3) and is making an angle of 30° with x-axis. 7

(ii) Prove $(1 + \cot\theta − \csc\theta)(1 + \tan\theta + \sec\theta) = 2$. 6

(iii) Find θ if $3\tan\theta + \cot\theta = 5\csc\theta$. 7

4. (i) Define set. Explain various types of sets. 7

(ii) Explain difference and symmetric difference of sets. 6

(iii) Explain the concepts of Permutation and Combination. 7

SECTION—C

5. (i) Define function. Explain various types of function. 7

(ii) Prove that $\underset{x\to 0}{\text{Limit}} \dfrac{a^x - 1}{x} = \log_e a$. 7

(iii) Find the derivative of $\log x$ by first principle method. 6

6. (i) If $f(x) = x^2$, discuss continuity of $f(x)$ at $x = 2$. 6

(ii) Find $\underset{x\to a}{\text{Limit}} \dfrac{6x^2 + 2x + 1}{6x^2 - 3x + 1}$. 7

(iii) Differentiate $\sqrt{x}$ ab-initio w.r.t. x. 7

SECTION—D

7. (i) Differentiate w.r.t. x, $\left(x + \dfrac{1}{x}\right)\left(\sqrt{x} + \dfrac{1}{\sqrt{x}}\right)$. 7

(ii) Differentiate $\log \sqrt{\dfrac{1 + x + x^2}{1 - x + x^2}}$. 6

(iii) Demand function is given to be $p = \dfrac{10}{3 + q}$, $0 \le q \le 9$ where p is price and q is quantity demanded. Find elasticity of demand at the end points (i.e. 0 and 9). 7

8. (i) If $x\sqrt{1 + y} + y\sqrt{1 + x} = 0$, show that $\dfrac{dy}{dx} = -(1 + x)^{-2}$. 7

(ii) Differentiate $x^x + x^{1/x}$ w.r.t. x. 7

(iii) If Total Cost function is $C = ax^3 + bx^2 + cx + d$ prove that slope of Average Cost is $\dfrac{1}{x}[MC - AC]$. 6

Exam. Code : 103201
Subject Code : 1046

B.A./B.Sc. 1st Semester
SOCIOLOGY
(Fundamentals of Sociology–I)

Time Allowed—3 Hours]   [Maximum Marks—100

Note :– Answer **FIVE** questions in all, selecting at least **ONE** question from each Section. Each Section has **TWO** questions and each question carries **20** marks.

SECTION—A

1. Is Sociology a science ? Discuss importance of Sociology.   20

2. Discuss relationship of Sociology with Psychology and Political Science.   20

SECTION—B

3. Define Association. Differentiate between Community and Association.   20

4. Write short notes on the following :
   (a) Types of Institutions
   (b) Human Society.   2×10=20

SECTION—C

5. Define and differentiate between Primary and Secondary Groups.   20

6. Write short notes on the following :
   (a) Reference Groups
   (b) Characteristics of Groups.   2×10=20

17(2118)/DAG-6783(T)   1   (Contd.)

SECTION—D

7. What is Social Structure ? Discuss characteristics of Social Structure. 20

8. Write short notes on the following :
   (a) Role Conflict
   (b) Ascribed and Achieved Status
   (c) Norms
   (d) Values. 4×5=20

(Punjabi Version)

ਨੋਟ : ਹਰੇਕ ਭਾਗ ਵਿੱਚੋਂ ਘੱਟੋ-ਘੱਟ **ਇੱਕ** ਪ੍ਰਸ਼ਨ ਦੀ ਚੋਣ ਕਰਦੇ ਹੋਏ ਸਾਰਿਆਂ ਵਿੱਚੋਂ **ਪੰਜ** ਪ੍ਰਸ਼ਨ ਕਰੋ। ਹਰੇਕ ਭਾਗ ਵਿੱਚ **ਦੋ** ਪ੍ਰਸ਼ਨ ਦਿੱਤੇ ਗਏ ਹਨ ਅਤੇ ਹਰੇਕ ਪ੍ਰਸ਼ਨ ਦੇ **20** ਅੰਕ ਹਨ।

ਭਾਗ—ੳ

1. ਕੀ ਸਮਾਜਸ਼ਾਸਤਰ ਇੱਕ ਵਿਗਿਆਨ ਹੈ ? ਸਮਾਜਸ਼ਾਸਤਰ ਦੇ ਮਹੱਤਵ ਬਾਰੇ ਚਰਚਾ ਕਰੋ। 20

2. ਮਨੋਵਿਗਿਆਨ ਅਤੇ ਰਾਜਨੀਤਕ ਵਿਗਿਆਨ ਦੇ ਨਾਲ ਸਮਾਜਸ਼ਾਸਤਰ ਦੇ ਸੰਬੰਧਾਂ ਬਾਰੇ ਚਰਚਾ ਕਰੋ। 20

ਭਾਗ—ਅ

3. ਐਸੋਸੀਏਸ਼ਨ ਨੂੰ ਪਰਿਭਾਸ਼ਿਤ ਕਰੋ। ਕਮਿਊਨਿਟੀ ਅਤੇ ਐਸੋਸੀਏਸ਼ਨ ਵਿਚਕਾਰ ਅੰਤਰ ਸਪਸ਼ਟ ਕਰੋ। 20

4. ਨਿਮਨਲਿਖਿਤ ਉਪਰ ਸੰਖਿਪਤ ਨੋਟ ਲਿਖੋ :
   (ੳ) ਸੰਸਥਾਵਾਂ ਦੀਆਂ ਕਿਸਮਾਂ
   (ਅ) ਮਨੁੱਖੀ ਸਮਾਜ। 2×10=20

ਭਾਗ—ੲ

5. ਪ੍ਰਾਇਮਰੀ ਅਤੇ ਸੈਕੰਡਰੀ ਸਮੂਹਾਂ ਨੂੰ ਪਰਿਭਾਸ਼ਿਤ ਕਰੋ ਅਤੇ ਇਹਨਾਂ ਵਿਚਕਾਰ ਅੰਤਰ ਸਪਸ਼ਟ ਕਰੋ। 20

6. ਨਿਮਨਲਿਖਿਤ ਉਪਰ ਸੰਖਿਪਤ ਨੋਟ ਲਿਖੋ :
   (ੳ) ਸੰਦਰਭ ਸਮੂਹ
   (ਅ) ਸਮੂਹਾਂ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ। 2×10=20

ਭਾਗ—ਸ

7. ਸਮਾਜਿਕ ਸੰਰਚਨਾ ਕੀ ਹੈ ? ਸਮਾਜਿਕ ਸੰਰਚਨਾ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ ਦੀ ਚਰਚਾ ਕਰੋ। 20

8. ਨਿਮਨਲਿਖਿਤ ਉਪਰ ਸੰਖਿਪਤ ਨੋਟ ਲਿਖੋ :
   (ੳ) ਭੂਮਿਕਾ ਸੰਘਰਸ਼
   (ਅ) ਨਿਰਦਿਸ਼ਟ ਅਤੇ ਪ੍ਰਾਪਤੀ ਸਥਿਤੀ
   (ੲ) ਮਾਨਕ
   (ਸ) ਮੁੱਲ। 4×5=20

(Hindi Version)

नोट :— प्रत्येक भाग में से कम से कम एक प्रश्न का चयन करते हुए सभी प्रश्नों में से कुल **पांच** प्रश्न करें। प्रत्येक भाग में से **दो** प्रश्न दिए गए हैं तथा प्रत्येक प्रश्न के **20** अंक हैं।

भाग—क

1. क्या समाजशास्त्र एक विज्ञान है ? समाजशास्त्र के महत्व पर चर्चा करें। 20

2. मनोविज्ञान और राजनीतिक विज्ञान के साथ समाजशास्त्र के संबंधों पर चर्चा करें। 20

भाग—ख

3. संस्था को परिभाषित करें। समुदाय और संस्था के मध्य अंतर स्पष्ट करें। 20

4. निम्नलिखित पर संक्षिप्त नोट लिखें :

(क) संस्थानों के प्रकार

(ख) मानव समाज। 2×10=20

भाग—ग

5. प्राथमिक और माध्यमिक समूहों को परिभाषित करें तथा इनके मध्य अंतर स्पष्ट करें। 20

6. निम्नलिखित पर संक्षिप्त नोट लिखें :

(क) संदर्भ समूह

(ख) समूह की विशेषताएं। 2×10=20

भाग—घ

7. सामाजिक संरचना क्या है ? सामाजिक संरचना की विशेषताओं पर चर्चा करें। 20

8. निम्नलिखित पर संक्षिप्त नोट लिखें :

(क) भूमिका संघर्ष

(ख) निर्दिष्ट और प्राप्त स्थिति

(ग) मानक

(घ) मूल्य। 4×5=20

Exam. Code : 103201

Subject Code : 1267

B.A./B.Sc. Ist Semester

CHEMISTRY

(Inorganic Chemistry-A)

Time Allowed—Three Hours]   [Maximum Marks—35

Note :—Attempt any **FIVE** questions, selecting at least **ONE** question from each section. Each question carries **7** marks.

SECTION—A

1. (a) Give electronic configuration of Fe^{2+} and Al^{3+}.

   1

   (b) State Heisenberg's uncertainty principle and Hund's rule of maximum multiplicity.   2

   (c) Explain the significance of principal quantum number, angular momentum number, magnetic quantum number, electron spin and magnetic spin quantum number.   4

2. (a) Calculate the kinetic energy of moving electron which has a wavelength of 4.5 pm [Given : Mass of electron = 9.1×10^{-31} kg; h = 6.63×10^{-34} kg m^{2}s^{-1}].

   2.5

(b) Give reasons for the following :

    (i) 4s orbital has less energy than 3d-orbital

    (ii) Half-filled and fully-filled orbitals are extra stable

    (iii) 1s orbital is spherically symmetrical.   4.5

SECTION—B

3. (a) Out of N and O, which has higher electronegativity and why ?   2

    (b) What is electron affinity ? Discuss various factors which affect electron affinity and also give its variation in a period and in a group in periodic table.   5

4. (a) Arrange the hydrogen halides in decreasing order of their ionic character : HBr, HCl, HI, HF. Also give suitable explanation in support of your answer.   2

    (b) What is electronegativity ? Discuss Pauling Scale and Mulliken concept of electronegativity.   5

SECTION—C

5. (a) Discuss the points of differences between valence bond theory and molecular orbital theory of covalent bonding.   3

    (b) Draw molecular orbital energy level diagram of CO. Also calculate its bond order.   4

6. (a) Discuss the shapes of CO_3^{2-} and PF_6^- on the basis of hybridization.   4

    (b) Give reasons for the following :

      (i) NO^+ has shorter bond length than NO, even though later has extra electron.

      (ii) Both CH_4 and H_2O have tetrahedral geometry but their bond angles are different.   3

SECTION—D

7. (a) Discuss the radius-ratio rule for prediction of structure of ionic crystals.   3

    (b) What is Born-Haber cycle ? How is it used to calculate the lattice energy of NaCl ?   4

8. (a) Melting point of NaCl is higher than that of $AlCl_3$. Give suitable reason.   1

    (b) What is the coordination number of Ca^{2+} and F^- ions in calcium fluoride structure ?   1

    (c) What are Fajan's rules ? How do they help in deciding the covalent character in a bond ?   5

Exam. Code : 103201

Subject Code : 1268

B.A./B.Sc. 1st Semester

CHEMISTRY (Organic Chemistry—B)

Time Allowed—3 Hours]   [Maximum Marks—35

Note :— Attempt any five questions, selecting at least one from each Section. The Fifth question may be attempted from any Section.

SECTION—A

1. (a) Which of the two, aniline and cyclohexylamine is more basic and why ?   3

    (b) Arrange the following acids in order of their increasing acidity and justify your answer : Benzoic acid, Salicylic acid, 2, 6-dihydroxybenzoic acid.   4

2. (a) Which of the following carbocation is more stable and why ?

         $^{\oplus}CF_3$ $\overset{\oplus}{H_2}C$–CF_3 3

    (b) An aqueous solution of tropylium bromide on treatment with $AgNO_3$ gives a white precipitate, why ?   2

    (c) Write the stable form of Cyclohexa-2, 4-dienone and justify your answer.   2

SECTION—B

3. (a) Explain why chlorination of n-butane in the presence of light gives a mixture of 72% of 2-chlorobutane and 28% of 1-chlorobutane while bromination gives 98% of 2-bromobutane and 2% of 1-bromobutane ?
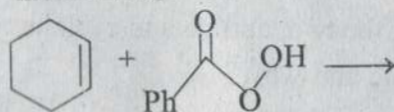
3

(b) Complete the following reaction with suitable mechanism :

$$F_3C \diagdown \diagup CH_3 \xrightarrow{HBr}$$
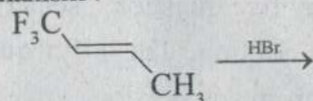
2.5

(c) Complete the following reaction with suitable mechanism.

$$\bigcirc + \underset{Ph}{\overset{O}{\diagdown}} OH \longrightarrow$$

1.5

4. (a) Using cis-and trans-stilbene, justify the fact that "Bromination of alkene is a stereospecific reaction."

4

(b) Why alkynes are less reactive towards electrophilic substitution reaction than alkenes ?

3

SECTION—C

5. (a) n-butyl bromide when heated with $AgNO_3$ gives a precipitate of AgBr while phenyl bromide does not give any reaction even on prolonged heating. Why ?

3

(b) Complete the following reaction with suitable mechanism and give explanation for the product expected :

$$\underset{OCH_3}{\overset{Br}{\bigcirc}} \xrightarrow[\text{Liq. NH}_3]{\text{NaNH}_2}$$
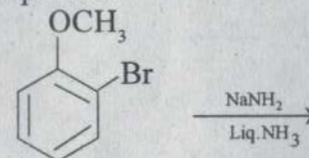
3

(c) Explain the term "Banana Bonds".

1

6. (a) Giving a suitable example, justify the fact that "S_N2 reaction proceeds with inversion of configuration".

3

(b) Vinyl chloride does not give nucleophilic substitution reaction but allyl chloride does, why ?

3

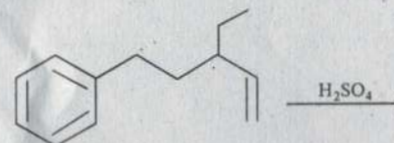(c) Cyclopropane is more reactive than Cyclohexane, why ?

1

SECTION—D

7. (a) Chlorobenzene is far less reactive than aniline towards electrophilic substitution reaction although chlorine and nitrogen havethe same electronegativity, why ?

3

(b) Complete the following reactive with a suitable mechanism :

$$\bigcirc \diagdown \diagdown \diagup \xrightarrow{H_2SO_4}$$

4

8. Complete the following reactions with suitable mechanism :

(i) $C_6H_5CH_3$ + Cl_2 $\xrightarrow{hv}$

(ii) C_6H_6 + $CH_3CH_2CH_2Cl$ $\xrightarrow{AlCl_3}$ 3.5+3.5

Exam. Code : 103201

Subject Code : 1278
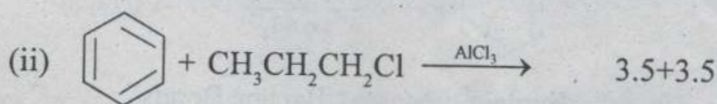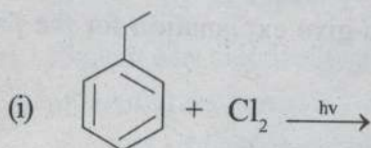
B.A./B.Sc. 1st Semester
CLINICAL NUTRITION AND DIETETICS
Paper—A
(Basic Nutrition)

Time Allowed—3 Hours]   [Maximum Marks—40

Note :— Attempt *five* questions in all, selecting at least *one* question from each section. The fifth question may be selected from any section.

SECTION—A

1. Explain FIVE FOOD GROUP PLAN along with their nutritive value.   8

2. What is the principle of Microwave cooking ? Explain the advantages. What precautions should be taken during microwave cooking ?   8

SECTION—B

3. How are carbohydrates important in the diet ? Discuss its sources and excess.   8

4. What are Proteins ? Discuss the classification and effects of deficiency of Protein.   8

SECTION—C

5. What is Fat ? Discuss its functions, effects of deficiency and excess.   8

6. Define Basal Metabolic Rate (BMR). Discuss the factors affecting BMR.   8

SECTION—D

7. What are Minerals ? Explain the functions and deficiency of Iodine.   8

8. Discuss sources, functions and deficiency of Vitamin 'C'.   8

57(2118)/DAG-6932   200

Exam. Code : 103201
Subject Code : 1277

B.A./B.Sc. 1st Semester

MICROBIOLOGY

(Fundamentals of Microbiology)

Time Allowed—3 Hours] [Maximum Marks—75

Note :— Question No. **1** is compulsory. Attempt any **one** question from each Unit.

1. Write briefly on the following topics :—

    (a) Archaebacteria

    (b) Negative staining

    (c) LPS

    (d) Volutin granules

    (e) Cilia

    (f) Hyperthermophile

    (g) Lag phase of growth curve

    (h) Mordant

    (i) Mesosome

    (j) Lambert Beer's law. 1.5×10

63(2118)/DAG-10307 1 (Contd.)

UNIT—I

2. Discuss the following in detail :—

   (a) Controversy on the theory of spontaneous origin of life.

   (b) Whittaker system of classification.

   (c) Characteristics of Protista kingdom.   5×3

3. (a) Differentiate between eukaryotic and prokaryotic cell structure.   6

   (b) Discuss the contributions of Robert Koch in the field of microbiology.   5

   (c) Write short note on Germ Theory of Disease.   4

UNIT—II

4. (a) Discuss various techniques used to obtain pure culture from mixed culture.   5

   (b) Write short note on various forms of pasteurization and their applications in food industry.   5

   (c) What are inclusion bodies ? Discuss the composition and function of any two organic inclusion bodies in bacteria.   5

5. (a) Discuss the structure and functions of following :—

   (i)   Cell wall of Gram-negative bacteria

   (ii)   Prokaryotic ribosomes.   3×2

   (b) Write short notes on bacterial movement.   4

   (c) Discuss the principle and structure of industrial autoclave.   5

UNIT—III

6. Discuss the following in detail along with suitable example :—

   (a) Nutritional types of bacteria.

   (b) Any three direct methods for measuring bacterial growth.

   (c) Different modes of action of antibiotics.   5×3

7. (a) Discuss the various phases of bacterial growth in batch culture. How the phases in batch culture differ from that obtained in continuous culture ?   6

   (b) What are the applications and mode of action of following chemicals used for sterilisation ?

   (i)   Phenol

   (ii)   Chlorine

   (iii)   Mercury.   2×3

   (c) Differentiate between selective and differential media. Also give suitable examples.   3

UNIT—IV

8. (a) Discuss the causative agent and diagnosis of any one each of respiratory and gastrointestinal viral diseases.   6

   (b) What is meant by epidemiology ? What is the importance of studying epidemiology ?   5

   (c) What is DOTS ? Explain in detail.   4

9. Discuss the causative agent, mode(s) of transmission, pathogenesis and diagnosis of following bacterial diseases :—

(a) Diarrhea

(b) Pneumonia

(c) Botulism. 5×3

20/12/...(म)

Exam. Code : 103201

Subject Code : 1280

B.A./B.Sc. Ist Semester

PHYSICS

Paper—A (Mechanics)

Time Allowed—Three Hours]   [Maximum Marks—35

Note :— Attempt **FIVE** questions selecting **ONE** question from each Section. **Fifth** question may be attempted from any section.

SECTION—A

I. (a) Express area element, volume element and solid angle in spherical polar coordinates.   5

(b) The spherical polar coordinates of a point are (10, 30°, 45°). Find the Cartesian coordinates of the same point.   2

II. (a) Derive the relation between Cartesian and Spherical polar coordinates.   5

(b) Define solid angle and give its units.   2

SECTION—B

III. Discuss Michelson Marley experiment and give its implications.   7

IV. (a) Obtain equation of motion for equivalent one body problem for two masses.   5

41(2118)/DAG-6494   1   (Contd.)

(b) What are turning points ? What is the number of turning points in an ellipse. 2

SECTION—C

V. (a) Discuss the variation of g with Latitude. 5

(b) Determine the Latitude at which the plane of vibration of Focault's pendulum does not rotate at all. 2

VI. Derive Gallilean transformation equations and show that the length of a body is Gallilean invariant. 7

SECTION—D

VII. Derive a relation between scattering angles in CM and Lab systems. How the two angles are related, when target and incident particles are of equal masses ? 7

VIII. Show that the angular momentum $\vec{L}$ of a rigid body is given by :

$$\vec{L} = \overset{(-)}{I} \vec{W}$$

where $\vec{W}$ is angular velocity. Show that the operator $\overset{(-)}{I}$ is a tensor of second rank. 7

Exam. Code : 103201

Subject Code : 1281

B.A./B.Sc. 1st Semester

PHYSICS PAPER—B

(Electricity & Megnetism)

Time Allowed—3 Hours]   [Maximum Marks—35

Note :— Attempt **FIVE** questions, selecting at least **ONE** question from each section. The **FIFTH** question may be attempted from any Section.

SECTION—A

1. (a) What do you understand by gradient of a scalar function ? Give its physical interpretation.   5

    (b) What is the geometrical interpretation of gradient of a scalar function.   2

2. (a) Explain electric flux density.   2

    (b) State and prove Gauss's theorem in electrostatics.   5

SECTION—B

3. Define electric potential and its units in SI system. Prove that the line integral of an electric field due to a point charge between two points is path independent.   7

42(2118)/DAG-10842   1   (Contd.)

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4. (a) What are Poisson's and Laplace equations in electrostatics ? 5

   (b) Derive relation between volt and stat-volt. 2

SECTION—C

5. Derive and explain equation of continuity and conservation of charge. 7

6. (a) Starting from vector statement of Ohm's Law $\vec{J} = \sigma \vec{E}$, how will you derive the same law in conventional form $V = IR$? 5

   (b) What is the atomic view of Ohm's law ? 2

SECTION—D

7. Find an expression for the electric field of a point charge moving with a uniform velocity. How does it differ from the field due to a stationary charge ? 7

8. Define intensity of magnetisation, magnetic susceptibility, permeability and then differentiate between diamagnetic, paramagnetic and ferromagnetic substances on the basis of these properties. 7

Exam. Code　:　103201
Subject Code　:　　1283

B.A./B.Sc. Ist Semester
ZOOLOGY ZOO-IA (Cell Biology)

Time Allowed—3 Hours]　　　　　[Maximum Marks—35

Note :— Attempt **five** questions, selecting at least one question from each Section. The fifth question may be attempted from any Section.

SECTION—A

1. Explain the principle of working of an electron microscope and give a comparative account of light microscopy and electron microscopy.　　　　7

2. Define Stain. Enlist various staining techniques and explain any one staining technique.　　　　7

SECTION—B

3. Describe the Na^+–K^+–ATPase active transport system and distinguish between active and passive transport. 7

4. Give an account of structure and functions of Endoplasmic reticulum.　　　　7

SECTION—C

5. Write a note on centrosome.　　　　7

6. Discuss the functions of Golgi apparatus in the cells.　7

SECTION—D

7. Define immunity. Explain briefly different kinds of immunity.

　　　　7

8. Explain the structure of nuclear envelope and its pores.

　　　　7

47(2118)/DAG-8515　　　　　　　　　　1500

Exam. Code : 103201
Subject Code : 1284

B.A./B.Sc. 1ˢᵗ Semester

ZOOLOGY

Paper–Zoo–IB (Biodiversity–I (Protozoa to Annelida))

Time Allowed—3 Hours]   [Maximum Marks—35

Note :— There are total nine questions. Question No. 1 is compulsory which will carry **1** mark each and candidates have to attempt **one** question each from remaining four units and each question will carry **7** marks each.

I.   (1) Explain osmoregulation in *Amoeba*.

     (2) What is Exo-erythrocytic stage of *Plasmodium vivax* ?

     (3) Explain Apopyle in *Sycon*.

     (4) Write about Medusa in *Obelia*.

     (5) How *Fasciola hepatica* enters into the human body ?

     (6) Write about gravid proglottid of *Taenia solium*.

     (7) Enumerate differences between male and female *Ascaris*.

UNIT–I

II. Explain in detail about reproduction in *Amoeba*.

III. Discuss sexual cycle of *Plasmodium vivax*.

48(2118)/DAG-6931   1   (Contd.)

UNIT–II

IV. Write in detail about canal system in *Sycon* and draw its labeled diagram.

V.   Explain three types of zooids in *Obelia* i.e. Polyp, Blastostyle and Medusa.

UNIT–III

VI. Write in detail about Miracidium larva of *Fasciola hepatica* with diagrammatic representation.

VII. Explain in detail about female reproductive system of *Taenia solium*.

UNIT–IV

VIII. Explain excretory system of *Ascaris* in detail.

IX. Discuss in detail about circulatory system of *Pheretima posthuma*.

Exam. Code : 105401

Subject Code : 1386

Bachelor in Business Administration (BBA) Ist Sem.

BBA-103 BASIC ACCOUNTING

Time Allowed—3 Hours]   [Maximum Marks—50

Note :— Question paper is divided into **four** sections : A, B, C and D. Attempt any **five** questions in all, selecting at least **one** question from each section. **All** questions carry equal marks.

SECTION—A

1. What do you mean by financial accounting ? Explain the main functions and limitations of financial accounting.

2. Journalize the following transactions in the Journal of M/s Gupta Brothers.

2018		Rs.
March 1	Started business with cash	2,00,000
March 2	Opened bank account with Central Bank of India.	80,000
March 4	Goods purchased from Raj	22,000
March 5	Good purchased for cash	30,000
March 8	Good sold to Naman	12,000
March 10	Cash paid to Raj	22,000
March 15	Cash received from Naman	11,700
	Discount allowed	300
March 16	Paid wages	200
March 18	Furniture purchased for office use	5,000
March 20	Withdrawn from bank for personal use	4,000

455(2118)/DAG-8529   1   (Contd.)

2018		Rs.
March 22	Issued cheque for rent	3,000
March 23	Goods taken for household purpose	2,000
March 24	Drawn cash from bank for office use	6,000
March 26	Commission received	1,000
March 27	Bank charges	300
March 28	Cheque issued for insurance premium	3,000
March 29	Paid salary	10,000
March 30	Cash sales	20,000

SECTION—B

3. On 31st January 2018 the pass book of Mr. M.L. Gupta shows the debit balance of Rs. 41,000. Prepare bank reconciliation statement from the following particulars :

(1) Cheques amounting to Rs. 15,600 were drawn on 27th January 2018. Out of which cheques for Rs. 11,000 were encashed up to 31st January 2018.

(2) A wrong debit of Rs. 800 has been given by the bank in the pass book.

(3) A cheque for Rs. 200 was credited in the pass book but was not recorded in the cash book.

(4) Cheques amounting to Rs. 21,000 were deposited for collection, but out of these cheques for Rs. 7,400 have been credited in the pass book on 5th February 2018.

(5) A cheque for Rs. 1,000 was returned dishonored by the bank and was debited in the pass book only.

(6) Interest on overdraft and bank charges amounting to Rs. 100 were not entered in the cash book.

(7) A cheque of Rs. 500 debited in the cash book was omitted to be banked.

4. What is depreciation ? Explain the need for providing depreciation. Explain two methods of providing depreciation.

SECTION—C

5. Following is the trial balance of M/s Kamal and Sons on 31st December 2018.

Head of Accounts	Dr. (Rs.)	Cr. (Rs.)
Cash in hand	1,080	
Cash at bank	5,260	
Purchases	81,350	
Returns outward		1,000
Sales		1,97,560
Returns inward	1,360	
Wages	20,960	
Fuel and power	9,460	
Carriage on sales	6,400	
Carriage on purchase	4,080	
Stock on 1.1.2018	11,520	
Building	60,000	
Freehold land	20,000	
Machinery	40,000	
Salaries	30,000	
Patents	15,000	
General Expenses	6,000	
Insurance	1,200	
Capital		1,42,000
Drawings	10,490	
Sundry debtors	29,000	
Sunday creditors		12,600
Total	**3,53,160**	**3,53,160**

Taking into account the following adjustments, prepare trading and profit and loss account and balance sheet.

(1) Stock in hand on 31st December 2018 is Rs. 13,600

(2) Machinery is to be depreciated @ 10% and patents @ 20%.

(3) Salaries for the month of December 2018 amounted to Rs. 3,000 were unpaid.

(4) Insurance included a premium of Rs. 170 for next year.

(5) Wages include a sum of Rs. 4,000 spent on the erection of a cycle shed for employees and customers.

(6) A provision for doubtful debts is to be created to the extent of 5% on sundry debtors.

6. What do you mean by financial statements ? Explain the usefulness of financial statements.

SECTION–D

7. Computerized accounting system is the best form of accounting system. Do you agree ? Comment on the statement.

8. Draw the Balance Sheet and Profit and Loss account of a company with imaginary figures.

Exam. Code : 105401
Subject Code : 1388

Bachelor in Business Administration (BBA) Ist Sem.
BBA-105 MANAGERIAL ECONOMICS–I

Time Allowed—3 Hours] [Maximum Marks—50

Note :— Attempt **Five** questions selecting at least **one** question each from Sections A, B, C and D. All questions carry equal marks. The **fifth** question may be attempted from any section.

SECTION—A

I. What is Price Elasticity of Demand ? How it is measured by different methods ?

II. State and explain Law of Equi-marginal Utility. Also discuss its exceptions.

SECTION—B

III. What is an Indifference Curve ? Prove that Price Effect is a Combination of Income effect and Substitution Effect. Also explain the Consumer's Equilibrium with the help of Indifference Approach.

IV. Critically explain strong and weak order conditions of Revealed Preference Approach.

SECTION—C

V. State and explain Law of Variable Proportions. Also write which state is rational ?

VI. Discuss the relationship between average revenue, marginal revenue and also discuss how elasticity of demand is determined from its mutual relationship.

SECTION—D

VII. How equilibrium of firm is determined under perfect competition in the short run period and long run period ? Explain.

VIII. How price and output are determined under monopolistic competition in the short run period and long run period ? Explain.

Exam. Code : 107201

Subject Code : 1773

Bachelor of Computer Application (BCA)

1st Semester

INTRODUCTION TO PROGRAMMING C

Paper—I

Time Allowed—3 Hours]   [Maximum Marks—75

Note :—Attempt any **FIVE** questions, selecting at least **ONE** question from each section. All questions carry equal marks.

SECTION—A

1. Write short notes on the following :—

   (a) Character set.

   (b) Keywords.

   (c) Identifier naming rules.

   (d) Expressions.

   (e) Symbolic constants. $5 \times 3 = 15$

2. (a) What are the different types of operators available in C ? Explain giving examples.   10

   (b) What is operator precedence and associativity ? Explain.   5

SECTION—B

3. Write a program for producing all the possible outcomes of rolling three dices.   15

4. (a) What are the different conditional control statements in C ? Explain giving examples.   10

    (b) Distinguish between break and continue statements.   5

SECTION—C

5. (a) Define functions. What are the methods of passing parameters to functions ? Explain giving examples.   10

    (b) Write a recursive function for finding factorial of a given number.   5

6. Define arrays. How two-dimensional arrays are declared and initialized ? Explain giving example.   15

SECTION—D

7. Define and distinguish between structures and unions. What are the uses of unions ? Explain giving examples.   15

8. Define pointer. How pointer to functions is used ? Explain giving example.   15

17-12-18

Bachelor of Computer Application (BCA) 1st Semester
APPLIED & DISCRETE MATHEMATICS
Paper—III

Time Allowed—3 Hours]   [Maximum Marks—75

Note :— Attempt *five* questions in all by selecting *one* question from each unit. All questions carry equal marks. The fifth question may be attempted from any unit.

UNIT—1

1. (a) If A = [1, 2, 3, 4, 5], B = [1, 3, 5, 7, 9], C = [2, 3, 4]
     verify that $A - (B \cup C) = (A - B) \cap (A - C)$.

    (b) Define :

     (i) Union of two set

     (ii) Intersection of two set, each with example.

    (c) A sample of 80 people have reveal that 24 like cinema and 62 like television programmes. Find the number of people who like both cinema and television programmes.

2. (a) Let A = [1, 2, 3], B = [4], C = [5]
     verify that $A \times (B \cup C) = (A \times B) \cup (A \times C)$.

    (b) Determine domain and range of relation R defined by :

     $R = [(x, y) : x \in N, y \in N \text{ and } x + y = 10]$

UNIT—2

3. (a) Draw Truth table $\sim (p \wedge q) \vee \sim (q \rightarrow p)$.

(b) Define :

  (i) Tautology

  (ii) Contradiction

  (iii) Logical equivalence, each with example.

4. (a) Test the validity of the following argument using truth table.

  If it rain then crop will be good.

  If did not rain, therefore crop will not be good.

(b) Write the truth table :

  $$[p \rightarrow (q \vee r)] \vee [p \leftrightarrow \sim r].$$

UNIT—3

5. (a) State and prove De-Morgan law for Boolean algebra.

(b) Show that set of all positive divisor of 12 does not form Boolean algebra under divisibility.

6. (a) Convert into DN form :

  $$((xy^1)z)^1 \cdot [(x^1 + z)(y^1 + z^1)^1].$$

(b) Defined :

  (i) Fundamental product

  (ii) Prime implicant.

(c) Show that xz^1 is prime implicant of :

  $$xy^1 + xyz^1 + x^1yz^1.$$

UNIT—4

7. (a) Find inverse of matrix :

  $$A = \begin{bmatrix} 2 & 2 & 1 \\ 1 & 0 & 2 \\ 2 & 1 & 2 \end{bmatrix}.$$

(b) If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$ prove that $A^2 - 4A - 5I = 0$.

8. (a) Express $A = \begin{bmatrix} 4 & 2 & -3 \\ 1 & 3 & -6 \\ -5 & 0 & -7 \end{bmatrix}$ as a sum of symmetric and skew-symmetric matrix.

(b) Find rank $A = \begin{bmatrix} 2 & 3 & 5 \\ 4 & 6 & 10 \\ -8 & -12 & -20 \end{bmatrix}$.

Exam. Code : 107401
Subject Code : 1824

B.Sc. Biotechnology 1ˢᵗ Semester

GENERAL MICROBIOLOGY–A

Paper–BT–8

Time Allowed—3 Hours] [Maximum Marks—40

Note :— Attempt **five** questions in all, selecting at least **one** question from each Section. The **fifth** question may be attempted from any Section.

SECTION—A

1. Discuss the following in detail :

    (a) Differences between Transmission and Scanning Electron Microscopy.

    (b) Nutrional types of bacteria along with suitable example.　　　　　　　　　　　　　　4×2

2. (a) Discuss the principle and method for sterilisation by using ionizing and non-ionizing radiations.　　4

    (b) Explain the working and various parts of fluorescent microscope.　　　　　　　　　　　4

SECTION—B

3. (a) Explain the tadpole structure of bacteriophage. What are various morphological types of bacteriophages ?　　　　　　　　　　4

    (b) Discuss various methods for the purification of bacterial isolate from a mixed culture.　　　　4

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4. Differentiate between the following :

    (a) Lyophilisation and Cryopreservation   3

    (b) General morphological features and reproduction methods of yeast and fungi.   5

SECTION—C

5. (a) What are Serotypes ? Discuss the importance of serotypes giving suitable example.   4

    (b) Principle of Gram staining. List one example for each Gram-positive and Gram-negative bacteria.   4

6. (a) Explain the structure and function of LPS and capsule in bacterial cell surface.   4

    (b) Explain positive and negative chemotaxis. What technique is used to observe the motility in bacteria ?   4

SECTION—D

7. Discuss the following :

    (a) Conventional methods to identify bacteria.

    (b) Four major categories of bacteria as discussed in Bergey's Manual of Determinative Bacteriology.   4×2

8. (a) Discuss the major sections of Bergey's Manual of Determinative Bacteriology.   4

    (b) Explain various molecular methods used to identify microorganisms.   4

Exam. Code   : 108201
Subject Code :   2051

B.Sc. Home Science 1st Semester
DRUG ABUSE : PROBLEM, MANAGEMENT AND PREVENTION

Time Allowed—3 Hours]   [Maximum Marks—50

Note :– There are **EIGHT** long answer type questions of equal marks. Candidates are required to attempt **FIVE** questions, selecting at least **ONE** question from each Section. The **FIFTH** question may be attempted from any Section.

SECTION—A

1. Write a note on the problem of Drug Addiction in Punjab.

2. Define drug abuse and classify drugs on different basis.

SECTION—B

3. Describe relationship between Anti-national activities and Drugs Abuse.

4. What is the impact of Drug Abuse on Society ?

610(2118)/DAG-6742   (Contd.)

SECTION—C

5. What is the role of Drug De-addiction centers for the prevention of Drug Abuse ?

6. Describe the various steps involved in management of drug abuse.

SECTION—D

7. What is the role of Psycho-Social Counselling in the prevention of Drug Abuse ?

8. Write a note on the Family Support and group therapy in the prevention of Drug Abuse.

Exam Code: 108501
Subject Code: 2094

B. Com. - Ist Sem.
(2118)
Paper: BCG-101
English Compulsory

Time allowed: 3 hrs.   Max. Marks: 50

Note: Students are required to attempt **FIVE** questions, selecting at least **ONE** question from **Each** section. The fifth question may be attempted from any section.

Section-A

I. **A.** Put the verb into the more suitable form, present perfect simple or continuous.

i) Where have you been ?

_____ (you/play) tennis ?

ii) This is a very old book. _____ (I/have) it since I was a child.

iii) 'Liz is away on holiday.' 'Is she ?

Where _____ (she/go) ?

B. Put in <u>been</u> or <u>gone</u>.

iv) James is on holiday. He's _____ to Italy.

v) Alice isn't here at the moment. She's _____ to the shop to get a newspaper.

vi) Tom has _____ out. He'll be back in about an hour.

vii) Are you going to the bank ? 'No, I've already _____ to the bank.

C. Complete the sentences with mustn't or don't/doesn't have to

viii) I don't want anyone to know about our plan. You _____ tell anyone.

ix) Richard _____ wear a suit to work, but he usually does.

x) I can sleep late tomorrow morning because I _____ go to work.

(1x10=10)

II. **A.** Put the verb into the correct form, present continuous or present simple.

i) My parents _____ (live) in Manchester.

ii) Can we stop walking soon ? _____ (I/start) to feel tired.

B. Write <u>for</u> or <u>since</u>.

iii) Paul has lived in Brazil _____ ten years.

iv) Kevin has been looking for a job _____ he left school.

v) I haven't been to a party _____ ages.

vi) Jane is away. She's been away _____ Friday.

vii) I'm tired of waiting. We've been sitting here _____ an hour.

C. Put in <u>will</u> or <u>won't</u> :

viii) Don't ask Amanda for advice. She _____ know what to do.

PTO

(2)

ix) I'm glad you're coming to see us next week. It _____ be good to see you again.

x) I've got some incredible news! you _____ believe it. (1x10=10)

Section-B

III. A. Write a paragraph on any one of the following topics :

i) My Ambition

ii) Drug Addiction (1x5=5)

B. Put in wish(ed) or hope(d)

i) We're going to have a picnic tomorrow, so I _____ the weather is nice.

ii) I _____ you a pleasant stay here.

Put the verb into the correct form.

iii) It was a stupid thing to say. I wish I _____ it (I/not/say)

iv) I'm fed up with this rain. I wish _____ (it/stop)

v) Are n't they ready yet ? I wish _____ (they/hurry up) (1x5=5)

IV. A. Write a paragaph on any one of the following topics :

i) College Life

ii) Pleasures of Reading (1x5=5)

B. Complete the sentences with say or tell (in the correct form)

i) Ann _____ goodbye to me and left.

ii) _____ us about your holiday. Did you have a nice time ?

iii) Don't just stand there! _____ something!

iv) Gary couldn't help me. He _____ me to ask Chris.

v) Gary couldn't help me. He _____ to ask Chris. (1x5=5)

Section-C

V. Write a character sketch of Madame Orielle. (10)

VI. Retell Bertha's story. (10)

Section-D

VII. How was Grimsdyke's life deeply influenced by 'the power of women? (10)

VIII. Discuss the message of the essay 'On Spendthrifts' as conveyed by A.G. Gardiner.(10)

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Exam. Code : 108501
Subject Code : 2095

B.Com. 1st Semester

PUNJABI COMPULSORY

Paper–BCG-102 (i)

Time Allowed—3 Hours]   [Maximum Marks—50

1. ਹੇਠ ਲਿਖੇ ਕਾਵ-ਟੋਟੇ ਦੀ ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ ਕਰੋ :

    ਸੋਹਣਿਆ ! ਤੂੰ ਦੱਸ ਨਾ, ਉਹ ਵੇਲੇ, ਕਿਉਂ ਲੱਦ ਗਏ ?

    ਵਹਿਮ ਸਨ ਸਾਡੇ ਠੀਕ, ਪਰ ਤੁਹਾਡੇ ਕੀ ਘੱਟ ਹਨ ?

    ਨਾਮ ਬਦਲੇ, ਰੂਪ ਬਦਲੇ, ਤੱਕੋ ਨੀਝ ਲਾ,

    ਹੈਨ ਉਹ ਸਭ ਉਹੋ ਜਿਹੇ ਵਹਿਮ ਅੱਜ ਵੀ ?

    ਆਦਮੀ ਦੀ ਪੂਜਾ ਛੱਡੀ ਮੰਨਿਆ ਗੁਨਾਹ ਸੀ,

    ਪਰ ਠੀਕਰੀਆਂ ਦੀ ਪੂਜਾ ਅੱਜ ਦੀ ਕਬਾਈ ਦਾ ਪੁੰਨ ਹੈ ?

    ਸੇਵਾ ਕਰਨੀ, ਮਜ਼ੂਰੀ ਮੰਗਣੀ ਨਾਂਹ, ਕੁਝ ਜਾਹਿਲ ਸੀ,

    ਕੂੜ ਪਾਪ ਕਰ ਅਮੀਰ ਹੋਣਾ, ਵਹਿਲਾ ਵਹਿਲਾ, ਇਹ

    ਬੇਸਬਰੀ ਕਦ ਅੰਮ੍ਰਿਤ ਬਣੀ ਸੀ ?

<p align="center">ਜਾਂ</p>

    'ਸਿਦਕਾਂ ਵਾਲਿਆਂ ਦੇ ਬੇੜੇ ਪਾਰ ਨੇ' ਕਵਿਤਾ ਦਾ ਵਿਸ਼ਾ-ਵਸਤੂ

    ਬਿਆਨ ਕਰੋ।   10

2. 'ਏਸ਼ੀਆ ਦਾ ਚਾਨਣ : ਭਗਵਾਨ ਬੁੱਧ' ਦਾ ਸਾਰ ਲਿਖੋ।

<p align="center">ਜਾਂ</p>

    'ਭਗਤੀ ਦਾ ਚਾਨਣ-ਮੁਨਾਰਾ : ਮੀਰਾ ਬਾਈ' ਜੀਵਨੀ ਵਿੱਚੋਂ

    ਮੀਰਾ ਬਾਈ ਦਾ ਬਿੰਬ ਉਸਾਰੋ।   10

3. ਹੇਠ ਲਿਖੇ ਵਿਸ਼ਿਆਂ ਵਿੱਚੋਂ ਕਿਸੇ **ਇੱਕ** ਉੱਪਰ ਪੈਰ੍ਹਾ-ਰਚਨਾ ਕਰੋ :

(1) ਗੁਰੂ ਨਾਨਕ ਦੇਵ ਜੀ

(2) ਇੰਟਰਨੈੱਟ

(3) ਰਾਜਨੀਤੀ।

ਜਾਂ

ਮਨੁੱਖੀ ਹੋਂਦ ਲਈ ਪਾਣੀ ਦੀ ਅਵੱਸ਼ ਲੋੜ ਹੈ। ਅਸਲ ਵਿੱਚ ਜੀਵਨ ਦਾ ਆਰੰਭ ਹੀ ਪਾਣੀ ਵਿੱਚੋਂ ਹੋਇਆ ਹੈ। ਆਦਿ ਕਾਲੀਨ ਮਨੁੱਖ ਪਾਣੀ ਦੀ ਲੋੜ ਕੁਦਰਤੀ ਸੋਮਿਆਂ ਜਿਵੇਂ ਦਰਿਆਵਾਂ ਜਾਂ ਝਰਨਿਆਂ ਤੋਂ ਪੂਰੀ ਕਰਦਾ ਸੀ। ਸਾਡੇ ਪਾਸ ਇਸ ਯੁੱਗ ਦੀ ਯਾਦਗਾਰ 'ਘਾਟ' ਦਾ ਸ਼ਬਦ ਹੈ, ਜਿਸ ਦਾ ਅਰਥ 'ਦਰਿਆ ਦਾ ਕੰਢ' ਹੈ, ਅਰਥਾਤ ਪਾਣੀ ਭਰਨ ਅਤੇ ਨਹਾਉਣ ਧੋਣ ਦੀ ਥਾਂ। ਇਸ ਤੋਂ ਇਲਾਵਾ 'ਘਾਟ' ਦਾ ਅਰਥ ਪੱਤਣ ਵੀ ਹੈ। ਪਾਣੀ ਭਰਨ ਵਾਲੀ ਥਾਂ ਲਈ 'ਪਨਘਟ' ਸ਼ਬਦ ਵੀ ਹੈ, ਜਿਸ ਦਾ ਜ਼ਿਆਦਾ ਸੰਬੰਧ ਹਿੰਦੀ ਨਾਲ ਹੈ। ਉਂਝ ਪੰਜਾਬੀ ਵਿੱਚ 'ਘਾਟਾਂ' ਦੀ ਵਰਤੋਂ ਵੀ ਪਾਣੀ ਭਰਨ ਦੀ ਥਾਂ ਲਈ ਘੱਟ ਵੱਧ ਹੀ ਹੁੰਦੀ ਹੈ ਅਤੇ ਇਸ ਦੀਆਂ ਪੈੜਾਂ ਕੇਵਲ ਅਖਾਣਾਂ ਜਾਂ ਮੁਹਾਵਰਿਆਂ ਵਿੱਚ ਹੀ ਦਿਸਦੀਆਂ ਹਨ, ਜਿਵੇਂ 'ਘਰ-ਘਾਟ', 'ਘਰ ਦਾ ਨਾ ਘਾਟ ਦਾ' ਅਤੇ 'ਘਾਟ ਘਾਟ ਦਾ ਪਾਣੀ ਪੀਣਾ'। ਘਰ ਦੇ ਟਾਕਰੇ ਘਾਟ ਦੀ ਵਰਤੋਂ ਤੋਂ ਇਸ ਥਾਂ ਦੀ ਮਹੱਤਤਾ ਦਾ ਭਲੀ-ਭਾਂਤ ਪਤਾ ਲੱਗ ਜਾਂਦਾ ਹੈ। ਘਾਟ ਤੋਂ ਅੱਗੇ ਚੱਲ ਕੇ ਖੂਹ ਦੀ ਕਾਢ ਸੱਭਿਆਤਾ ਦੇ ਵਿਕਾਸ ਦੀ ਇੱਕ ਵੱਡੀ ਘਟਨਾ ਹੈ। ਪੰਜਾਬੀ ਜਨ-ਜੀਵਨ ਵਿੱਚ ਖੂਹ ਦੀ ਸੰਸਥਾ ਨਵੇਕਲੀ ਹੈ। ਸਮੇਂ ਦੇ ਹੋਰ ਅੱਗੇ ਵੱਧਣ ਨਾਲ ਖੂਹਾਂ ਦੀ ਥਾਂ ਨਲਕੇ ਮੱਲ ਲੈਂਦੇ ਹਨ ਅਤੇ ਅੱਜ-ਕੱਲ੍ਹ

ਟੂਟੀਆਂ ਤੇ ਜਲ-ਘਰਾਂ ਦਾ ਬੋਲਬਾਲਾ ਹੈ। ਇਸ ਤਰ੍ਹਾਂ ਸਮੇਂ ਦੇ ਫੇਰ ਨਾਲ ਪਨਘਟ ਤੇ ਖੂਹਾਂ ਤੋਂ ਪਾਣੀ ਭਰਨ ਦਾ ਰਿਵਾਜ, ਜੋ ਜਨਾਨੀਆਂ ਦਾ ਕਿੱਤਾ ਸੀ, ਇੱਕ ਬੀਤੇ ਸਮੇਂ ਦੀ ਯਾਦ ਬਣ ਕੇ ਰਹਿ ਗਿਆ ਹੈ। ਬਾਂਕੀਆਂ ਨਾਰਾਂ ਦਾ ਖੂਹ ਤੇ ਪਾਣੀ ਭਰਨਾ ਅਤੇ ਚਾਹਵਾਨ ਰਾਹੀਆਂ ਦਾ ਪਾਣੀ ਦਾ ਘੁੱਟ ਮੰਗਣਾ, ਸਾਡੇ ਲੋਕ-ਗੀਤਾਂ ਦਾ ਸਜੀਵ ਦ੍ਰਿਸ਼ ਹੈ।

ਉਪਰੋਕਤ ਪੈਰ੍ਹੇ ਨੂੰ ਧਿਆਨ ਨਾਲ ਪੜ੍ਹੋ ਤੇ ਹੇਠ ਲਿਖੇ ਪ੍ਰਸ਼ਨਾਂ ਦਾ ਉੱਤਰ ਦਿਓ :

(ੳ) ਮਨੁੱਖੀ ਜੀਵਨ ਵਿੱਚ ਪਾਣੀ ਦਾ ਕੀ ਮਹੱਤਵ ਹੈ ?

(ਅ) 'ਘਾਟ' ਸ਼ਬਦ ਕਿਹੜੇ-ਕਿਹੜੇ ਅਰਥ ਦਾ ਧਾਰਨੀ ਰਿਹਾ ਹੈ ?

(ੲ) ਪਾਣੀ ਪ੍ਰਾਪਤ ਕਰਨ ਦੇ ਵੱਖ-ਵੱਖ ਸੋਮੇ ਕਿਹੜੇ ਰਹੇ ਹਨ ?

(ਸ) ਲੋਕ-ਗੀਤਾਂ ਵਿੱਚ ਪਾਣੀ ਨਾਲ ਸੰਬੰਧਿਤ ਕਿਹੜੇ ਸਜੀਵ ਦ੍ਰਿਸ਼ ਹਨ ?

(ਹ) 'ਬਾਂਕੀਆਂ' ਤੋਂ ਕੀ ਭਾਵ ਹੈ ?   10

4. ਭਾਸ਼ਾ ਅਤੇ ਉਪ-ਭਾਸ਼ਾ ਦੀ ਪਰਿਭਾਸ਼ਾ ਦੱਸਦੇ ਹੋਏ ਦੋਨਾਂ ਵਿੱਚ ਅੰਤਰ ਸਪਸ਼ਟ ਕਰੋ।

ਜਾਂ

ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੇ ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ ਬਾਰੇ ਸੰਖੇਪ ਜਾਣਕਾਰੀ ਦਿਓ।   10

5. ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ ਕੀ ਹੁੰਦਾ ਹੈ ? ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਟਕਸਾਲੀ ਰੂਪ ਕਿਹੜਾ ਹੈ ?   10

Exam. Code : 108501

Subject Code : 2096

B.Com. 1st Semester

FINANCIAL ACCOUNTING

Paper–BCG-103

Time Allowed—3 Hours]   [Maximum Marks—50

Note :— (1) The candidates are allowed to use non scientific calculator.

(2) The candidates are required to attempt **five** questions, selecting at least **one** question from each section. The fifth question may be attempted from any section.

SECTION—A

1. What is Financial Accounting ? Explain its nature and limitations.

2. Write short notes on the following :

(i) "Capital expenditure is different from revenue expenditure" — explain.

(ii) "Capital receipt is different from revenue receipts" — explain.

SECTION—B

3. Explain the Income Statement under Sole Trader Concept.

4. S.S. Himalaya on voyage to Calcutta to Mumbai on 31st December on which date the accounts are to be closed, the return voyage has not been completed. The detail of the entire voyage to Mumbai and back to Calcutta completed after 31st December were :

Freights   4,00,000
Coal consumption   70,000
Stores consumed   30,000
Port charges   15,000
Salaries of crew   40,000
Depreciation   40,000
Insurance-ship   20,000
Insurance-freight   8,000
Primage   10%

Address commission 5%; only Rs. 1,50,000 freight was available on return journey.

Prepare Voyage Account upto 31st December.

SECTION—C

5. Mr. Mohan of Mangalore consigned goods costing Rs. 40,000 to his agent Ravi at a Proforma invoice price of 20% profit on cost price. He paid Rs. 1,200 towards freight and insurance. Ravi was allowed Rs. 550 for establishment expenses. He was entitled to a commission of 3% and 2% del-credere commission. He was also allowed 10% of the net profit as special commission after charging such commission.

Ravi took delivery of goods paying Rs. 400 as octroi. He sold 3/4 of the goods at 50% profit on cost. He reported that 1/2 of the balance of goods were destroyed by fire and a claim was lodged for Rs. 6,000. It was settled at a discount of 25% and the claim amount was received directly by the consignor. Ravi paid the amount due, by bank draft. Prepare the necessary ledger account in the books of the consignor.

6. (a) Difference between Joint Venture and Consignment.
   (b) Difference between Joint Venture and Partnership.

SECTION—D

7. What do you mean by departmental accounts ? Explain its objectives. Briefly discuss the methods of departmental account.

8. Mr. Amar Singh has a branch in Chandigarh where goods are sent with loading of 20% on cost. Head Office keeps all records. Show Chandigarh branch A/c in the books of Head Office with the following information :

Opening stock at invoice price   12,000
Closing stock at invoice price   9,000
Credit sales   20,500
Cash sales   8,750
Receipts from debtors   18,950
Debtors (closing)   4,580
Goods received from Head Office   15,000
Goods in transit (closing)   1,800
Expenses paid by Head Office   5,200

Exam. Code : 108501
Subject Code : 2097

B.Com Ist Semester
BCG-104 BUSINESS ORGANIZATION

Time Allowed—3 Hours] [Maximum Marks—50

Note :— The paper consists of **FOUR** Sections (A to D). Each section consists of **TWO** questions carrying equal marks. Candidates are required to attempt **FIVE** questions, selecting at least **ONE** question from each Section. The **FIFTH** question may be attempted from any Section.

SECTION—A

1. Define ethics. Explain is it role and various elements of business ethics.

2. Explain the following :

    (a) Types of business

    (b) Importance of business organisations.

SECTION—B

3. Define company. How is it different from sole proprietorship and partnership firm ?

4. Discuss various forms of public enterprises with advantages and disadvantages.

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SECTION—C

5. Define optimum business Unit. Discuss in detail the factors which help in determining the optimum size.

6. Discuss in detail the priority of large scale operations as compared to small scale operations.

SECTION—D

7. Define business combinations. Illustrate with examples the factors which lead to business combinations.

8. Define stock exchange. Explain in detail types of stock exchange and various functions performed by them.

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Exam. Code : 108501

Subject Code : 2096

B.Com. 1st Semester

FINANCIAL ACCOUNTING

Paper–BCG-103

Time Allowed—3 Hours]　　　　[Maximum Marks—50

Note :— (1) The candidates are allowed to use non scientific calculator.

(2) The candidates are required to attempt **five** questions, selecting at least **one** question from each section. The fifth question may be attempted from any section.

SECTION—A

1. What is Financial Accounting ? Explain its nature and limitations.

2. Write short notes on the following :

    (i) "Capital expenditure is different from revenue expenditure" — explain.

    (ii) "Capital receipt is different from revenue receipts" — explain.

SECTION—B

3. Explain the Income Statement under Sole Trader Concept.

on 31 December on which date the accounts are to be closed, the return voyage has not been completed. The detail of the entire voyage to Mumbai and back to Calcutta completed after 31ˢᵗ December were :

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Depreciation	40,000
Insurance-ship	20,000
Insurance-freight	8,000
Primage	10%

Address commission 5%; only Rs. 1,50,000 freight was available on return journey.

Prepare Voyage Account upto 31ˢᵗ December.

SECTION—C

5. Mr. Mohan of Mangalore consigned goods costing Rs. 40,000 to his agent Ravi at a Proforma invoice price of 20% profit on cost price. He paid Rs. 1,200 towards freight and insurance. Ravi was allowed Rs. 550 for establishment expenses. He was entitled to a commission of 3% and 2% del-credere commission. He was also allowed 10% of the net profit as special commission after charging such commission.

Ravi took delivery of goods paying Rs. 400 as octroi. He sold 3/4 of the goods at 50% profit on cost. He reported that 1/2 of the balance of goods were destroyed by fire and a claim was lodged for Rs. 6,000. It was settled at a discount of 25% and the claim amount was received directly by the consignor. Ravi paid the amount due, by bank draft. Prepare the necessary ledger account in the books of the consignor.

6. (a) Difference between Joint Venture and Consignment.

   (b) Difference between Joint Venture and Partnership.

SECTION—D

7. What do you mean by departmental accounts ? Explain its objectives. Briefly discuss the methods of departmental account.

8. Mr. Amar Singh has a branch in Chandigarh where goods are sent with loading of 20% on cost. Head Office keeps all records. Show Chandigarh branch A/c in the books of Head Office with the following information :

Opening stock at invoice price	12,000
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Credit sales	20,500
Cash sales	8,750
Receipts from debtors	18,950
Debtors (closing)	4,580
Goods received from Head Office	15,000
Goods in transit (closing)	1,800
Expenses paid by Head Office	5,200

Exam. Code : 108501
Subject Code : 2098

B.Com. 1st Semester

BUSINESS COMMUNICATION

Paper : BCG-105

Time Allowed—3 Hours]   [Maximum Marks—50

Note :— The paper consists of **FOUR** Sections (A to D). Each section consists of **TWO** questions carrying equal marks. Candidates are required to attempt **FIVE** questions, selecting at least **ONE** question from each Section. The **FIFTH** question may be attempted from any Section.

SECTION—A

1. What role does communication play in business ? Discuss the process of communication and its important elements.

2. Organizational communication could be of different types. What can be different types of communication and how do they differ from each other ?

SECTION—B

3. Effective presentation on any chosen topic calls for effective skills. What are these skills and important considerations while making presentations ?

4. What do you mean by etiquette ? How are they important in business ? Give suitable examples for some business etiquettes which are essential in business dealings.

SECTION—C

5. Draft a notice informing employees about the upcoming week being celebrated as cleanliness week and the actions required on their part.

6. Your marketing manager has called for a sales report for the last month. What are the considerations in preparing this report ? Give a sample.

SECTION—D

7. What role does a resume play for a job applicant ? Discuss the important. considerations in preparing a resume.

8. Write a convincing letter to your shareholder who has made a complaint for non-processing of application for transfer of shares initiated six months back.

Exam. Code   : 108501
Subject Code :   2099

B.Com. 1st Semester
BUSINESS STATISTICS
Paper–BCG-106

Time Allowed—3 Hours]   [Maximum Marks—50

Note :—Attempt any **five** questions selecting at least **one** question from each Section. Each question carries **10** marks.

SECTION—A

1. Define statistics. Discuss the scope of statistics in business.   10

2. (a) What do you mean by arithmetic mean ? Differentiate between simple and weighted arithmetic mean. When is the usage of median considered more appropriate than mean ?

   (b) Given below is the data of 20 initial public offerings by Indian companies during July 2013. Find out the price mostly offered by the companies during this month :

14.25	19.00	11.00	28.00
24.00	23.00	43.25	19.00
27.00	25.00	15.00	7.00
34.22	15.50	15.00	22.00
19.00	19.00	27.00	21.00

   5,5

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SECTION—B

3. (a) An analysis of weekly wages paid to workers in two firms A and B gives the following results :

	A	B
No. of Workers	60	80
Average Wages	300	350
Standard Deviation	40	45

(i) In which firm there is a greater variability of wages ?

(ii) What are the measures of average wage and standard deviation of the two firms taken together ?

(b) Calculate mean deviation about the mean for the following data :

x :	10	11	12	13	14	Total
y :	3	12	18	12	3	48

5,5

4. (a) Following data relate to the marks obtained by 10 students of a class where X and Y are the marks in Statistics and Costing :

Statistics	Costing
30	29
38	27
28	22
27	29
28	20
23	29
30	18
33	21
28	27
35	22

(b) Calculate Spearman's Rank coefficient of correlation. Data on vehicles passing through seven different highways during a day and the number of accidents reported are given below. Compute the coefficient of correlation.

No. of vehicles (in 000s) (X)	9	11	14	15	16	19	21
No. of accidents reported (Y)	30	40	60	70	85	95	110

5,5

SECTION—C

5. It is said that 'Index numbers are specialized type of averages'. How far do you agree with this statement ? Briefly explain the Time Reversal Test and Factor Reversal Test. Discuss the various problems faced in the construction of Index Numbers. 10

6. Find Laspeyre's, Paasche's, Fisher's and Marshall Edgeworth index number for the following data and also check factor reversal test :

Commodity	2015		2016	
	Price (Rs.)	Quantity (Kg.)	Price (Rs.)	Quantity (Kg.)
A	20	8	40	9
B	50	10	60	10
C	40	15	60	12
D	10	15	151	15

10

SECTION—D

7. Calculate seasonal indices for each quarter from the following percentages of wholesale price indices to their moving averages :

Year	Quarter			
	I	II	III	IV
2001	—	—	11.0	11
2002	12.5	13.5	15.5	14.5
2003	16.8	15.2	13.1	15.3
2004	11.2	11.0	12.4	13.2
2005	10.5	13.3	—	—

10

8. (a) The chances that a person hits a target is three out of four while the chances of another person hitting the same target is two out of three. Find the probability of the target being hit when they both try.

   (b) A bag contains 9 white and 6 red balls. Three balls are drawn one after another such that :
   (i) the balls are replaced before next drawing, and (ii) the balls are not replaced before the next drawing. Find the probability of drawing all the three red balls in each case. 5,5

Exam. Code   : 108501
Subject Code :   2100

B.Com. 1st Semester

COMPUTER FUNDAMENTALS

Paper : BCG-107

Time Allowed—3 Hours]   [Maximum Marks—50

Note :— Attempt total **FIVE** questions by selecting at least **ONE** question from each section, **FIFTH** question may be attempted from any section. Each question carries equal marks.

SECTION—A

1. Explain the various generations of Computers.

2. Differentiate the following :

   (a) Supercomputer *Vs* Personal Computer

   (b) Software *Vs* Hardware.

SECTION—B

3. What is the use of Computer ? How the data is processed in it and what is the necessity to process the data ? Justify your answer with at least one application related to IT industry.

4. Explain the role of computer in following :

   (a) Education System

   (b) Graphics and Multimedia.

SECTION—C

5. What is the difference between primary and secondary memory ? Explain the working of Hard Disk.

6. Explain the working of any one input device and one output device.

SECTION—D

7. What are various types of computer languages ? Explain the role of each with some example and with its advantages.

8. Explain the various types of operating systems.

Exam. Code : 108601

Subject Code : 2153

B.Sc. Fashion Designing 1st Semester
CONCEPT OF FASHION
Paper–II

Time Allowed—3 Hours] [Maximum Marks—50

Note :— Attempt **five** questions in all, selecting at least **one** question from each Section. Each question carries equal marks. The fifth question may be attempted from any Section.

SECTION–A

1. Define the following :
    (a) Style
    (b) Classic
    (c) Fad
    (d) Silhouette.

2. Define fashion and discuss its importance for apparel industry.

SECTION–B

3. Discuss the various principles of fashion.
4. Explain the origin and evolution of fashion.

SECTION–C

5. Discuss the role of social and psychological aspects of clothing.
6. Write about the various factors affecting fashion.

SECTION–D

7. What is fashion cycle ? Discuss the various stages of fashion cycle.
8. Give a comparison between trickle down and bottom up theory.

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Exam. Code : 108601
Subject Code :   2154

B.Sc. Fashion Designing Ist Semester

BASICS OF SEWING—I

Paper—III

Time Allowed—3 Hours]   [Maximum Marks—50

Note :— All questions carry equal marks. Attempt
FIVE questions in all, selecting atleast **ONE** question
from each Section.

SECTION—A

1. Explain the following terms :—

    (a)   Dart Points.

    (b)   Grain Line.

2. Differentiate between :

    (a)   Scissors and Shears.

    (b)   Sewing needles and Machine needles.

SECTION—B

3. Discuss the need of different sized needles, threads and
    stitches according to the fabric.

4. Explain the following :—

    (a) Puckering of fabric.

    (b) Causes of upper thread breaking.

    (c) Loop formation during stitching.

    (d) Tension Regulator.

SECTION—C

5. Write about the various seam finishes used in the sewing of a garment.

6. What are the tucks ? Write about their types and application in clothing.

SECTION—D

7. With the help of illustrations, explain the various types of pockets.

8. Discuss the various types of plackets used in garment construction.

Exam. Code : 108601

Subject Code :   2155

B.Sc. Fashion Designing 1st Semester

BASICS OF COMPUTERS

Paper—IV

Time Allowed—3 Hours]   [Maximum Marks—50

Note :— Attempt **FIVE** questions, selecting atleast **ONE** question from each Section. All questions carry equal marks.

SECTION—A

1. What is Computer ? Explain the working of different components of computer.

2. What do you mean by data processing ? Explain various activities involved in data processing.

SECTION—B

3. What do you mean by Output Device ? Explain the working of one output device in detail.

4. What do you mean by secondary memory ? How it is different from primary memory ? Explain its different types.

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SECTION—C

5. Explain various steps involved in the mail-merge facility available in MS-WORD using any example.

6. Explain various options available in :—

   (a) Page Setup

   (b) Header & Footer.

SECTION—D

7. Discuss the use of computer in Fashion Industry. Name few softwares used for Fashion Designing. Explain CAD in detail.

8. Why is sketching important in design process ? What are its various uses ? Explain with examples.

Exam. Code : 108601
Subject Code :   2157

B.Sc. Fashion Designing 1ˢᵗ Semester
PAPER–VI : COMMUNICATION SKILLS IN ENGLISH–I

Time Allowed—3 Hours]   [Maximum Marks—50

Note :— Attempt any **FIVE** questions, selecting one question from each Section. The **fifth** question may be attempted from any section. Each question carries **10** marks.

SECTION—A

1. Explain the role of Reading Skills in communication.

        10

2. Explain kinds of Reading purposes.   10

SECTION—B

3. Read the passage below and answer the questions that follow :

    The largest Hindu temple in the world "is of such extraordinary construction that it is not possible to describe it with the pen, particularly since it is like no other building in the world. It has towers and decorations and all refinements which the human genius can conceive of". This largest Hindu temple is not in India but in Angkor, Cambodia, and the above observation is by a Portuguese monk Antonio da Magadalena, who visited the temple in

1586. This observation, was vouched for in mid-19th century by Henri Mouhot, a French explorer. The city of Angkor was the capital wherefrom a dynasty of Khmer kings ruled one of the prosperous kingdoms in the history of South-East Asia. Hindu King Suryavarman II, who reigned from 1113 to 1150, took nearly 30 years to complete this temple. It was dedicated to Lord Vishnu and at the time was known as Vrah Vishnuloka or the Sacred Abode of Vishnu. In the 13th century, Khymers embraced Buddhism and the King Jayavarman VII transformed it into Buddhist temple. The sculptures and the carvings in this temple, therefore, are a juxtaposition of the Hindu and the Buddhist relics.

Questions :

(1) Why is it difficult to describe the temple ?

(2) Who appreciated the beauty of the temple ?

(3) How long did it take to build the temple ?

(4) What did Jayavarman VII do ?

(5) Give meanings of the following words in English :

    (a) Extraordinary

    (b) Prosperous.   2×5=10

4. Read the passage below and answer the questions that follow :

Till date it is difficult to define happiness. Most people tend to equate happiness with fun, good living, plenty of money. If happiness were synonymous with all this, rich people with all their luxuries and countless parties would be perpetually happy. But in actual fact, they are, frequently, acutely unhappy, despite their riches and ability to indulge in fun activities at will. We may have fun watching a movie, going shopping, meeting friends–these are all fun activities that afford us fleeting moments of relaxation and enjoyment. Another prevalent belief is that if one were rich enough not to have to work one would be blissfully happy. But a job is more than just a pay cheque. Almost all religions teach that work is worship. Work holds the key to happiness as doing something which increases confidence and self-worth. It brings on a feeling of satisfaction, of doing something, of contributing. No doubt the pay cheques count. It would be unrealistic to suggest that one could be happy without the basic shelter, roaming the streets with empty stomach. But job satisfaction comes less from how much one earns than from the challenge of the job. Happiness is much stronger, deeper and more abiding emotion. A secret ingredient of happiness is contentment. Contentment here does not mean apathy or lack of ambition, just as commitment does not mean curtailment of freedom. Commitment teaches us to give so that we may receive and contentment helps us to cherish the gifts we have received. These things are worth a try even if they don't promise access to the pinnacle of success.

Tick (✓) the appropriate answer :

(i) The passage indicates that happiness is :

    (a) Easy to define

    (b) Dancing, shopping and getting what one wants

    (c) Difficult to define

    (d) Impossible thing

(ii) Rich people despite their ability to indulge in fun :

    (a) Are always happy

    (b) Are frequently unhappy

    (c) Are always angry

    (d) Remain quiet and calm

(iii) Work holds the key to happiness because :

    (a) It increases confidence and self-worth

    (b) It increases blood circulation

    (c) It forces a person to be competitive

    (d) It is incorrect, work promotes stress

(iv) A secret ingredient of happiness is :

    (a) spend money

    (b) to be lazy

    (c) to be selfish

    (d) contentment

(v) Contentment teaches us to :

    (a) Cherish the gifts we have received

    (b) To ask for more than what is received

    (c) Indulge in selfish acts

    (d) Jealous of other people.   10

SECTION—C

5. Write a letter to the Municipal Commissioner of your city drawing his attention towards the menace of stray dogs in your locality.   10

6. Write a letter to your friend who met with an accident and is admitted in the hospital. Wish your friend a speedy recovery and advise him to be careful while driving.   10

SECTION–D

7. What are the salient features of Resume ?   10

8. You are Headboy/Headgirl of the college. Draft a notice for the students of the college asking them to donate for the victims of Earthquake. You can imagine the necessary details.   10

Exam. Code : 108601
Subject Code : 2161

B.Sc. Fashion Designing 1st Semester
DRUG ABUSE : PROBLEM, MANAGEMENT AND PREVENTION
Paper—VIII

Time Allowed—3 Hours]   [Maximum Marks—50

Note :– There are **EIGHT** long answer type questions of equal marks. Candidates are required to attempt **FIVE** questions, selecting at least **ONE** question from each Section. The **FIFTH** question may be attempted from any Section.

SECTION—A

1. Write a note on the problem of Drug Addiction in Punjab.

2. Define drug abuse and classify drugs on different basis.

SECTION—B

3. Describe relationship between Anti-national activities and Drugs Abuse.

4. What is the impact of Drug Abuse on Society ?

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SECTION—C

5. What is the role of Drug De-addiction centers for the prevention of Drug Abuse ?

6. Describe the various steps involved in management of drug abuse.

SECTION—D

7. What is the role of Psycho-Social Counselling in the prevention of Drug Abuse ?

8. Write a note on the Family Support and group therapy in the prevention of Drug Abuse.

Exam. Code : 111201

Subject Code : 3153

Bachelor of Vocation (Textile Design & Apparel Technology) 1st Semester

COMPUTER APPLICATION–I

PAPER–III

Time Allowed—3 Hours] [Maximum Marks—30

Note :— Attempt **Five** questions, selecting at least one question from each section. The **fifth** question may be attempted from any section. Each question carries **6** marks.

SECTION—A

1. Explain the characteristics of a computer. 6

2. What are the methods of data processing in computer ? 6

SECTION—B

3. What is the difference between Data and Information ? What are the fundamental characteristics of information ? 6

4. How is information accessed on-line ? Explain different ways to do so ? 6

SECTION—C

5. What is difference between Hardware & Software ?
   Is CPU hardware or software explain it.   6

6. What is the purpose of system software ? Discuss any
   two types of system software.   6

SECTION—D

7. What is MS-Word ? Discuss the features of a good
   word processor.   6

8. Explain about :

   (i)   Cut.......Copy......Paste options

   (ii) Page-set up and spell checker options.   3×2

Exam. Code : 105701

Subject Code :   8103

B.Sc. Information Technology 1st Semester

(Old Sylb 2016)

BASIC MATHEMATICS & STATISTICS

Paper–III

Time Allowed—3 Hours]   [Maximum Marks—75

Note :— (1) Attempt any **five** questions. All questions carry equal marks.

(2) Only non-programmable and non- storage type calculator is allowed.

1. (a) U = [1,2,3,4,5,6,7,8,9] A = [1,2,3,4]
B= [2,4,6,8] C = [3,4,5,6]

Find :

(i) (B – C)'

(ii) (A ∩ C)'

(iii) (A U B)'

(b) Let U = [1,2,3,4,5,6] A = [2,3] B = [3,4,5]. Find A^c, B^c, $A^c \cap B^c$, A U B and hence show that $(A \cup B)^c = A^c \cap B^c$.

2. (a) In a group of 50 people, 35 speak Hindi, 25 speak both Hindi and English and all the people speak at least one of two languages. How many people speak only English and not Hindi ? How many speak English ?

(b) Let A = [Y,2] B = [3,4]. Find number of relation from A into B.

3. (a) Let R be relation on set N of Natural numbers defined by a + 3b = 12

Find :

   (i) R

   (ii) Domain of R

   (iii) Range of R

(b) If $Y = X^Y$, prove that : $\dfrac{dy}{dx} = \dfrac{Y^2}{X(1 - Y\,LOG\,X)}$.

4. (a) $Y = \sin^2 x/(1 + \cos^2 x)$ find dy/dx.

(b) $(\sin x)^y = (\sin y)^x$ find dy/dx.

5. (a) Evaluate $\int x.\log x\,dx$.

(b) Evaluate $\int_1^2 e^x\left(\dfrac{1}{x} - \dfrac{1}{x^2}\right) dx$.

6. (a) An urn contains 5 red and 5 black balls. A ball is drawn at random, its color is noted and returned to urn ; moreover 2 additional balls of color are drawn and put in the urn and then a ball is drawn at random. What is probability then second ball is red ?

(b) If $P(E) = 3/5$ $P(F) = 3/10$ $P(E \cap F) = 1/5$, are E and F independent ?

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7. (a) $A = \begin{bmatrix} 5 & 0 & 4 \\ 2 & 3 & 2 \\ 1 & 2 & 1 \end{bmatrix}$ find its inverse.

(b) Prove that :

$$\begin{bmatrix} 1 & 1 & 1 \\ \alpha & \beta & \gamma \\ \beta\gamma & \gamma\alpha & \alpha\beta \end{bmatrix} = (\alpha - \beta)(\beta - \gamma)(\gamma - \alpha)$$

8. (a) Verify Cayley Hamilton theorem $A = \begin{bmatrix} 3 & 2 & 4 \\ 4 & 3 & 2 \\ 2 & 4 & 3 \end{bmatrix}$.

(b) Find eigen value of matrix $A = \begin{bmatrix} 3 & 1 & 4 \\ 0 & 2 & 6 \\ 0 & 0 & 5 \end{bmatrix}$.

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Exam. Code   : 107201
Subject Code :   8116

Bachelor of Computer Application (BCA) 1ˢᵗ Sem.
(Old Sylb 2016)
INTRODUCTION TO PROGRAMMING C–I
Paper–I

Time Allowed—3 Hours]   [Maximum Marks—75

Note :— Attempt any **five** questions. All questions carry equal marks.

1. Write an algorithm for searching a number from a list of numbers.   15

2. What are decision trees ? How these are used in program design ? Explain giving example.   15

3. What do you mean by operator precedence ? Draw the operator precedence tree.   15

4. What are the different input and output functions in C ? Explain giving examples.   15

5. (a) What are the different conditional control statements in C ? Explain giving examples.   10

    (b) Distinguish between break and continue statements.   5

6. (a) What do you mean by function declaration, function definition and function call ? 10

(b) Define recursion. 5

7. Write a program to compute factorial of a number using recursive function. 15

8. Define arrays. How arrays are passed as function arguments ? Explain. 15

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B.Sc. Fashion Designing - Ist Sem. (Old Syllabus 2017)

(2118)

Paper-V

Textile Chemistry-I

Time allowed: 3 hrs.   **Max. Marks: 60**

Note:-Attempt any **Six** questions out of the following eight questions. Each question carries 10 marks. **Question No. 1 is compulsory.**

1. Define any **TEN** out of the following:-
   1) Textured yarn
   2) Blended yarn
   3) Artificial Silk
   4) Filament
   5) Drawing process
   6) Resiliency
   7) Elasticity
   8) Slub yarn
   9) Tex
   10) Moisture Regain
   11) Abrasion Resistance
   12) Combed yarn   [10X1 = 10]

2. Discuss the classification of textile fibre on the basis of source and origin along with their end uses.   [10]

3. Discuss the Nylon fibre manufacturing process along with their properties and end uses. [10]

4. Explain the physical and chemical properties of Silk fiber along with their end uses.   [10]

5. Compare the properties of Viscose Rayon and Polyester fiber.   [10]

6. Write short note on

   1) Melt spinning

   2) Carbonization process   [5X2= 10]

7. Explain the cotton yarn manufacturing process in detail.   [10]

8. Explain in detail about the blending of textile fibre and its impact on the properties of final product.   [10]

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S. No. 54

B.A./B.Sc. - Ist Sem. (Old Syllabus 2014)

(2118)

Mathematics Paper-II

(Calculus-I)

Time allowed: 3 hrs.   Max. Marks: 50

Note: Attempt five questions in all, selecting atleast TWO questions from each section. All questions carry equal marks.

SECTION-A

1. a) Prove that $\sqrt{7}$ is not a rational number.

   b) Solve $\frac{x-2}{x+2} < \frac{x+1}{x-1}$ (5,5)

2. a) Prove that union of two bounded sets is a bounded set. What can you say about its converse? Justify your answer.

   b) Prove that $\underset{x \to 0}{Lt} \sin \frac{1}{x}$ *does not exist*   (5,5)

3) a) Prove that $\underset{x \to \frac{1}{2}}{Lt} [1 + x + x^2] = 1$

   b) For what values of a and b will the following function be continuous $\forall x$?

   $$f(x) = \begin{cases} 13, & x \leq 2 \\ ax^2 + bx + 1, & 2 < x < 3 \\ 17 - ax, & x \geq 3 \end{cases}$$

   c) Show that $f(x) = x^2 + 5$ is uniformly continuous on [0,1].   (3,4,3)

4. a) Find $\frac{dy}{dx}$, if $y = x^{coshx} + (sinhx)^{2x}$

   b) State and prove Squeeze Principle.   (5, 5)

5) a) Give an example of a field which is not complete. Justify your answer.

   b) Prove that $2tanh^{-1}\left(tan \frac{x}{2}\right)$ and $cosh^{-1}(secx)$ can only differ by a constant (5, 5)

SECTION-B

6) a) if $p^2 = a^2 cos^2\theta + b^2 sin^2\theta$ prove that $p + \frac{d^2 p}{d\theta^2} = \frac{a^2 b^2}{p^3}$

   b) if $y = cos(m \sin^{-1} x), find \, y_n(0)$ (5,5)

7) a) Evaluate $\underset{x \to 0}{Lt} \left(\frac{a^x + b^x}{2}\right)^{\frac{1}{x}}$

   b) Use Maclaurin's Theorem with Lagrange's form of remainder to expand sin x in a line the nth term in terms of ascending powers of x.   (5,5)

8) a) State and prove Leibnitz's Theorem.

(2)

7) Show that the points of inflexion of the curve $y^2=(x-a)^2(x-b)$ lie on the line $3x+a=4b$.

(5,5)

9) a) Find the position and nature of double points of the curve $y^2=(x-1)(x-2)^2$

b) Find the asymptotes of the curve

$3x^3+ 2x^2y-7xy^2 +2y^3 -14xy +7y^2 +4x +5y =0$

Show that the asymptotes meet the curve again at three points which lie on a line. Find its equation. (5,5)

10. a) Trace the curve $y = \dfrac{x}{1+x^2}$

b) Find the curvature at the point $(\frac{3a}{2}, \frac{3a}{2})$ on the curve $x^3 + y^3 =3axy$ (5,5)

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Exam. Code : 108701

Subject Code : 8860

B.A. Journalism and Mass Communication
1ˢᵗ Semester (Old Sylb. 2017)

COMPUTER APPLICATIONS FOR JOURNALISM

Paper—105

Time Allowed—3 Hours]   [Maximum Marks—75

SECTION—A

Note :— Attempt **All** questions. Each question carries
2 marks.

1. What is hardware ?

2. Define PageMaker.

3. What is Clip Art ?

4. Define MS-Excel.

5. What is the full form of CPU ?

6. What is MS-Access ?

7. Define Interfacing.

8. What is keyboard ?

9. What is CorelDraw ?

10. What is left alignment ?

SECTION—B

Note :— Attempt any **Seven** questions our of **Ten**.
Each question carries **5** marks.

1. What is PageMaker ?

2. Discuss the history of computers.

3. What do you mean by digital technology ?

4. Differentiate between hardware and software.

5. Discuss formatting techniques in detail.

6. What is Interfacing ?

7. Discuss text creation and alignment in detail.

8. What are conversion graphs ?

9. Write a note on the use of colors in publishing concepts.

10. What are the formatting techniques ?

SECTION—C

Note :— Attempt any **Two** questions out of **Four**.
Each question carries **10** marks.

1. What is a computer ? Discuss its generations in detail.

2. What are the types of computers ?

3. Write a note on MS-Office and its functions.

4. Write a note on PageMaker and its functions.