



Group A

1. State the meaning of book- keeping. Explain its any three objectives.
2. What do you understand by business entity concept?
3. What is going concern concept.
4. Define accounting. Explain its any three objectives.
5. State the money measured concept of accounting
6. Differentiate between book keeping and accounting under any three basis.
7. Describe any three functions of accounting.
8. What do you understand by going concern concept of accounting?
9. Explain any three features of book-keeping.
10. Give the meaning of accounting equation.
11. Briefly explain any three features of double entry book-keeping system.
12. Describe any three scope of accounting.
13. Explain any three causes of dishonor of cheque.
14. Define bank reconciliation statement.
15. Give the meaning of credit note.
16. Explain any three causes of disagreement between cashbook and passbook.
17. Give the meaning of debit note.

Accounting Equation

1. Give the accounting equation from the following transactions.
 - a. Mr. Bidhan started a business with capital of Rs. 1, 00, 000.
 - b. Purchased goods worth Rs. 20, 000.

- c. Borrowed a loan of Rs. 50, 000 from Himalayan Bank.
- d. Sold goods worth Rs. 15, 000 for cash Rs. 18, 000
- e. Purchase a furniture worth Rs. 12, 000
- f. Damaged goods by fire Rs. 1, 000.

2. Give the accounting equation from the following transactions.
 - a. Hari Om started a business with Rs. 80, 000.
 - b. Purchased goods worth Rs. 4, 000 and paid cash Rs. 1, 500 as partial payment.
 - c. Amount withdrawn from the business Rs. 500.
 - d. House rent outstanding worth Rs 2, 000.
 - e. Sold goods worth Rs. 10, 000.
 - f. Paid Rs. 4, 000 for staff salary.
3. Give the accounting equation from the following transactions.
 - a. Invested cash in a new business Rs. 2, 50, 000
 - b. Purchased goods worth Rs. 10, 000 from Binayak on credit.
 - c. Sold goods and received cash Rs 2, 000 and cheque of Rs. 3,000.
 - d. Withdrawn Rs 6, 000 cash from bank for office use.
 - e. Distributed goods worth Rs. 4, 000 for a charity.
 - f. Received Rs, 6, 000 for house rent of 3 months in advance.
4. The following transaction are given.
 - a. Commencement of business with cash Rs. 50, 000.
 - b. Purchase of goods worth Rs. 15, 000 on cash.
 - c. Paid house rent Rs. 6, 000 for the month Bhadra.
 - d. Sold goods for Rs. 15, 000.

Required: Accounting Equation
5. Give the accounting equation from the following transactions.
 - a. Commenced a business with furniture worth Rs. 4, 000 and cash Rs. 100, 000.
 - b. Withdrawn Rs. 3, 000 for office use and 2, 000 for domestic use from bank.
 - c. Bought goods worth Rs.4, 000, paid cash Rs. 2, 500 and balance on credit.
 - d. Paid Rs. 500 for electricity and Rs. 900 for telephone charge.
 - e. Sold goods worth Rs. 10, 000 for cash Rs 9, 000.
 - f. Paid HimalRs. 4, 000 in full settlement of his debt Rs.5, 000.

Journal and Ledgers:

1. The following transactions are given to you:

- Kartik 5 Goods purchased and paid through cheque Rs.5, 000.
- Kartik 10 Goods sold for cash Rs. 5, 000.
- Kartik 20 Purchased furniture and paid through chequeRs. 1,000.
- Kartik 17 Deposited into bank Rs.4, 000.
- Kartik 20 Withdrawn cash Rs. 6, 000 for office use.

Required: a) Journal Entries. b) Cash account c) Bank account

2. The following transactions are given to you:

- Asoj 2 Goods purchased for Rs. 15, 000 and paid Rs. 5, 000 cash. The balance amount paid through cheque.
- Asoj 3 Goods sold for cash Rs. 15, 000 and received cheque for the same.
- Asoj 4 Received cash Rs. 9,800 from a debtor in full settlement of Rs.10, 000.
- Asoj 5 Deposited into bank Rs.4, 000.
- Asoj 6 Withdrawn cash Rs. 6, 000 for personal use.

Required: a) Journal Entries. b) Cash account c) Bank account

3. The following transactions are given to you:

- Shrawan 05 Paid by chequeRs 6, 400 for the purchase of goods after deducting discount Rs.100
- Shrawan 07 Cheque of Rs.12, 300 received from Mohan after deducting discount Rs. 200.
- Shrawan 10 Goods sold on cash for Rs. 3, 000.
- Shrawan 12 Purchased office furniture for Rs. 10, 000 and paid by cheque.
- Shrawan 15 Withdrew from bank Rs. 6, 000.
- Shrawan 27 Paid salary by chequeRs. 2, 500.

Required: a) Journal Entries. b) Bank account c) Discount account

4. The following transactions are given to you:

- Poush 4 Paid for office rent Rs.2, 000.
- Poush 8 Cash sales worth Rs. 8, 000.
- Poush 9 Paid bank charge Rs. 200.
- Poush 10 Paid cash to BipulRs 2, 900 after deducting discount Rs. 100.
- Poush 12 Purchased goods worth Rs.5 ,000.
- Poush 15 Cash received from SaradRs 2, 200 after deducting discount Rs 300.

Required: a) Journal Entries. b) Cash account c) Discount account.

5. The following transactions are given to you:

- Poush 4 Purchased goods and paid buchequeRs 2, 500.
- Poush 8 Withdrawn cash Rs 2, 000 for office use.
- Poush 9 Cash deposited into bank Rs 8, 000.
- Poush 10 Purchased machinery and paid through chequeRs 3, 000.
- Poush 12 Paid for stationery Rs 500.
- Poush 15 Received cash Rs 1, 500 from Manisha and deposited into bank.
- Poush 22 Paid wages Rs 300.
- Poush 25 Goods sold Rs1, 500 and received cheque.

Required: a) Journal Entries. b) Cash account c) Discount account

DOUBLE COLUMN CASH BOOK

1. The following cash and bank transactions are given to you:

- Kartik 1 Balance of cash in hand Rs.20, 000 and cash at bank Rs.50, 000.
- Kartik 5 Goods purchased and paid through cheque Rs.5, 000.
- Kartik 10 Goods sold for cash Rs. 5, 000.
- Kartik 20 Purchased furniture and paid through chequeRs. 1,000.
- Kartik 17 Deposited into bank Rs.4, 000.
- Kartik 20 Withdrawn cash Rs. 6, 000 for office use.

Required: Double column cash book cash and bank column.

2. The following cash and bank transactions are given to you:

- Asoj 1 Balance of cash in hand Rs.10, 000 and cash at bank Rs.1,00, 000.
- Asoj 2 Goods purchased for Rs. 15, 000 and paid Rs. 5, 000 cash. The balance amount paid through cheque.
- Asoj 3 Goods sold for cash Rs. 15, 000.
- Asoj 4 Received cash Rs. 9,800 from a debtor in full settlement of Rs.10, 000.
- Asoj 5 Deposited into bank Rs.4, 000.
- Asoj 6 Withdrawn cash Rs. 6, 000 for personal use.

Required: Double column cash book cash and bank column.

3. The following transactions are given to you:

- Sharawan 1 Bank balance Rs.16,000.
- Shrawan 05 Paid by chequeRs 6, 400 for the purchase of goods after deducting discount Rs.100
- Shrawan 07 Cheque of Rs.12, 300 received from Mohan after deducting discount Rs. 200.
- Shrawan 10 Goods sold on cash for Rs. 3, 000.
- Shrawan 12 Purchased office furniture for Rs. 10, 000 and paid by cheque.
- Shrawan 15 Withdrew from bank Rs. 6, 000.
- Shrawan 27 Paid salary by chequeRs. 2, 500.

Required: Double column cash book bank and discount column.

4. The following transactions are given to you:
- | | |
|----------|--|
| Poush 2 | Balance of cash in hand Rs.15, 000. |
| Poush 4 | Paid for office rent Rs.2, 000. |
| Poush 8 | Cash sales worth Rs. 8, 000. |
| Poush 9 | Paid bank charge Rs. 200. |
| Poush 10 | Paid cash to BipulRs 2, 900 after deducting discount Rs. 100. |
| Poush 12 | Purchased goods worth Rs.5 ,000. |
| Poush 15 | Cash received from SaradRs 2, 200 after deducting discount Rs 300. |

Required: Double column cash book cash and discount column.

Triple column cash book:

1. The following cash and banking transactions are given to you:

- | | |
|------------------|--|
| Chaitra 1, 2070 | Cash in hand Rs.4, 500 and balance at bank RS.5, 000. |
| Chaitra 3, 2070 | Purchased goods and paid cash Rs.2, 000 and by cheque RS. 1, 500. |
| Chaitra 5, 2070 | Paid cash Rs.475 to Sona after deducting discount Rs.25. |
| Chaitra 7, 2070 | Cash sales Rs. 250. |
| Chaitra 9, 2070 | Deposited into bank Rs 3, 500. |
| Chaitra 11, 2070 | Received Cash from Bipin after deducting 10% discount and total receivable is Rs.2, 000. |

Required: Triple column cash book with cash, bank and discount column.

2. The following cash and banking transactions are given to you:

- | | |
|------------|--|
| Sharawan 1 | Bank balance Rs.16, 000 and cash in hand Rs. 10, 000. |
| Shrawan 05 | Issued a cheque of Rs 6, 400 for the purchase of goods after deducting discount Rs.100 |
| Shrawan 07 | Cheque of Rs.12, 300 received from Mohan after deducting discount Rs. 200. |
| Shrawan 10 | Goods sold on cash for Rs. 3, 000. |
| Shrawan 12 | Purchased office furniture for Rs. 10, 000 and paid by cheque. |
| Shrawan 15 | Withdrew from bank Rs. 6, 000. |
| Shrawan 27 | Paid salary by chequeRs. 2, 500. |

Required: Triple column cash book with cash, bank and discount column.

3. The following transactions are given to you:

- | | |
|----------|--|
| Poush 2 | Balance of cash in hand Rs.15, 000and cash at bank |
| Poush 4 | Paid for office rent Rs.2, 000. |
| Poush 8 | Cash sales worth Rs. 8, 000. |
| Poush 9 | Paid bank charge Rs. 200. |
| Poush 10 | Paid cash to BipulRs 2, 900 after deducting discount Rs. 100. |
| Poush 12 | Purchased goods worth Rs.5, 000. |
| Poush 15 | Cash received from SaradRs 2, 200 after deducting discount Rs 300. |

Required: Triple column cash book with cash, bank and discount column.

4. The following cash and banking transactions are given to you.

- | | |
|----------|--|
| Poush 1 | Cash in hand RS. 2, 000 and bank balance Rs. 5, 000. |
| Poush 3 | Bought goods and paid cash Rs. 700 and cheque of Rs. 1, 300. |
| Poush 7 | Paid to Diana Rs. 950 after deducting 5% discount. |
| Poush 12 | Cash sales made Rs. 2, 500. |
| Poush 15 | Deposited cash into bank Rs. 2, 000. |
| Posh 20 | Cash received from SrijanaRs. 4, 900 after deducting discount Rs. 100. |

Required: Triple column cash book with cash, bank and discount column.

Subsidiary Book

Solve the following problems:

Type A (Sales Book and sales account)

1. The following informations are given to you:
- | | |
|------------|--|
| 8/12/2065 | <u>Sold on credit to Himel Stationery</u>
5 pencil boxes @ Rs. 400 each box
10 eraser boxes @ Rs. 100 each box
(Less: 10% trade discount) |
| 16/12/2065 | <u>Sold on credit to Bimal Stationery</u>
20 pencil cutter boxes @ Rs. 55 each box
15 instrument boxes @ Rs. 60 each box |
| 23/12/2065 | <u>Sold on cash to Kamal Stationery</u>
50 glue sticks @ Rs. 25 each |

Required: a. Sales book b. Sales account

2. The following information are supplied to you:
- Sold on credit to Hira Furniture, Lagankhel
10 Sofa set @ Rs. 8,000 each set.
3 revolving chair @ Rs. 1000 each.
(Less: 10% trade discount)
 - Sold on cash to Hamro furniture, Kalanki
25 sitting tools @ Rs. 550 each.
5 Tea-table @ Rs. 2000 each table.
 - Sold on credit to Décor furniture shop, Kalimati
2 Cupboard @ Rs. 25,000 each.(5% trade discount)
8 DiningTable @ Rs. 15,000 each.
 - Sold old computer for Rs. 8,000 to Himal trade Link,Baneswor on credit.

Required: a. Sales book b. Sales account c. Hira furniture account.

3. The following information are supplied to you by Namuna Light House, Pepsicola:

- 1 Nov 2014 Sold to Jhilimili Light House, Koteswor on credit.
30 pcs wall-light @ Rs. 100 each.
3 doz on fancy light chair @ Rs. 100 each.
(Less: 15% trade discount)
- 2 Nov 2014 Sold to New star lighting, Gwarko on credit.
250 pcs light switch @ Rs. 25 each.
120 pcs tube-light @ Rs50 each.
(Less: 5% trade discount)
- 5 Nov 2014 Sold on credit to Sweta Lights, Kumaripati
20 metre electric wires @ Rs. 10 per metre.
5 pcs disco-light @ Rs. 500 each.
- 7 Nov 2014. Sold old Furniture for Rs. 1,000 to Komal on cash.

Required: a. Sales book b. Sales account

Type B (Purchase Book and Purchase account)

4. The following information of Creation Grocery of Kalimati are given to you:

- 5/12/2068 Purchased from Kusum Supplies, Kusunti on credit.
50 kgs Basmati Rice @ Rs. 80 each per kg.
2 quintals Pokhrela rice @ Rs. 60 per kg.
(Less: 7% trade discount)
- 16/12/2068 Purchased from Rakesh Varieties, Mangalbar on credit.
20 kgs black dal @ Rs. 150 per kg.
50 kgmsuro dal @ Rs. 130 per kg.
- 28/12/2068 Purchased from Bhat-Bhateni super store on cash.
20 kgs wheat flour @ Rs. 45 per kg.

70 packets milk powder@ Rs. 225 per packet.

Required: **Required:** a. Purchase book b. Purchase account

5. The following information are supplied to you:

- Purchased from Ocean Furniture, Kandaghari.
13 set dining table @ Rs. 10,000 each set.
8 set computer table @ Rs. 2000 each.
(Less: 2% trade discount)
- Purchased from Kasturi furniture, Balaju on cash.
25 set desk @ Rs. 850 each.
20 set chair @ Rs. 350 each chair.
- Purchased from Lumanti furniture shop, Asan.
5 set Cupboard @ Rs. 15,000 each.(5% trade discount)
10 pieces T-Table at Rs. 30,000.
- Purchased a P₄ Laptop for Rs. 50,000 from Bimal Ultimate Solution,Tripureswor on credit.

Required: a. Purchase book b. Purchase account

6. The following information are supplied by Oskar Electronic House, Newroad:

- 1 Dec 2013 Purchased from ABC Elotronics , Singapoor on credit.
10 pcs i-phones @ Rs.16,000 each.
50 pcs Nokia mobile-set @ Rs.8,000 per set.
(Less: 25% trade discount)
- 12 Dec 2013 Purchased from XYZ Electronics, Malesiya on credit.
25 pcs Dell-Laptop @ Rs. 45,000 each.
20 pcs tablets @ Rs 12,000 each.
(Less: 8% trade discount)
- 15 Dec 2013 Bought from PQR Electronics, Japan on cash.
15 pcs Lava mobile-set @ Rs. 6,000 per set.
- 27 Dec 2013. Bought a sofa set for Rs. 50,000 from Bira Furniture on credit.

Required: a. Purchase book b. Purchase

Type C (Purchase returnBook and Purchase return account)

7. The following informations of Sweetymadira Shop are given to you:

- 5/11/2069 Returned to Hanuman Supplies, Kumaripati.
50 bottles Ruslan Vodka @ Rs. 1000 per bottle..
30 bottle Gurans wine @ Rs. 750 per bottle.
(Less: 10% trade discount)
- 16/11/2069 Returned to Sugreeb Store, Kamalpokhari.
50 bottle Tuborg beer @ Rs. 225 per bottle.
10 bottle whisky @ Rs. 1300 per bottle.
- 28/11/2069 Returned to Baaner Store, Kastamandap bazar.

50 bottle Carlsborg beer @ Rs. 215 per bottle.
10 bottle Dandaghare wine @ Rs. 600 per bottle.

Required: a. Purchase return book b. Purchase return account

Bank Reconciliation Statement

1. Mr. Mane provides you the following particulars

- a) Balance as per pass book on 31st July, 2003 Rs 42600
- b) Debit side of pass book was under cast by Rs. 4300
- c) Cheques of Rs. 18400 drawn on 31st July 2003 but not cleared till 4th August 2003
- d) Cheques Rs. 18300 paid in the bank on 15th July 2003 but collected and credited in August 2003
- e) A bill receivable for Rs 7250 due on 31st July 2003 was sent to the bank for collection, the proceeds were credited on 1st August 2003 in the bank
- f) Rs. 560 insurance premium paid by the bank as per standing order on 30th July 2003.

Required: Bank reconciliation statement showing the balance as per cash book on 31st July 2003

2. The following extracts are given to you

- a) Bank Balance as per pass book Rs. 16610 on Chaitra 31st 2060
- b) The bank made payment as per standing instruction
Life insurance premium Rs. 4300
Telephone charges Rs. 1850
- c) Manoj's cheque of Rs 8410 was deposited and credited by the bank which was mistakenly recorded as Rs. 4810 in the cash book.
- d) A cheque of Rs. 6240 has been debited in the bank column of the cash book, but it was not sent to bank for collection yet.
- e) Debit side of cash book was over cast by Rs. 410

Required: Bank reconciliation statement showing the balance as per cash book as on 31st Chaitra 2061

3. On checking Mrs. Ganguli's cash book with the bank statement for the month April 2004, the following differences are identified.

- a) Cash book showed an overdraft of Rs. 12500
- b) Interest on investments collected by the bankers and credited in the passbook amounted to Rs. 3420

c) Cheques sent into bank, but not cleared and credited before 30th April 2004 Rs. 6850

d) Cheques issued, but not cashed till 30th April, amounted to Rs. 3440

e) Dividend of the amount of Rs. 710 had been paid directly into the bank and not entered in the cash book.

Required: Bank reconciliation statement

4. The bank balance as per cashbook showed an overdraft of Rs. 20500 on Asadh 31, 2061 despite the following differences.

a) The pass book showed a credit of Rs. 800 to the account being interest on securities collected by the bankers.

b) Cheque paid and credited by bank but the same was omitted to be entered in the cash book Rs. 4310

c) There was a credit of Rs. 300 for interest on saving account and a debit of Rs. 70 for bank charges for service rendered by bank.

d) Cheque issued to a supplier for Rs. 1800 was by mistake entered in the cash column of the cash book. The same has not been presented for payment.

e) A sum of Rs. 980 deposited in the bank but the bank wrongly credited as Rs. 890 in the pass book.

Required: Bank reconciliation statement

Group B (For failed in unit test only)

1. The following transactions are given.

- a. Introduced capital Rs. 2,00,000 into a new business.
- b. Purchased goods worth Rs. 50,000 on credit.
- c. Sold furniture worth Rs. 6,000 at Rs. 10,000.
- d. Paid to creditors Rs. 19,900 in full settlement of Rs. 20,000.

Required: Accounting Equation.

2. The following transactions are given.

- a. Started a business with cash Rs. 50,000, goods Rs. 15,000 and furniture Rs. 10,000.
- b. Paid house rent in advance Rs. 7,000.
- c. Salaries of current month Rs. 25,000 paid through bank.
- d. Withdrawn cash from business Rs. 3,000 for personal use.

Required: Accounting Equation.

3. The following transaction are given.
- Invested cash Rs. 1, 00, 000 and goods worth Rs. 50, 000 into a business.
 - Goods (Costing Rs. 9, 000) sold on credit on Rs. 8, 500.
 - Loan taken from bank Rs. 25, 000.
 - Charged depreciation on furniture Rs. 5, 000.
- Required:** Accounting Equation.

4. The following transaction are given.
- Business started with cash Rs. 40, 000, stock of goods Rs. 30, 000 and equipment Rs. 50, 000.
 - Goods (Costing Rs. 9, 500) sold on credit on Rs. 10, 000.
 - Goods worth Rs. 2, 000 destroyed by fire and insurance company did not admitted the claim.
 - Purchased fixed assets worth Rs. 10, 000
- Required:** Accounting Equation.

5. The following information are supplied to you.
- Bidhan started with cash Rs. 70, 000, goods Rs. 40, 000 and machinery Rs. 50, 000.
 - Goods (Costing Rs. 11, 500) sold on cashtRs. 10, 000.
 - Goods worth Rs. 2, 000 destroyed by fire and insurance company admitted only 50% of the claim.
 - Purchased an old computer worth Rs. 10, 000
- Required:** Accounting Equation.

6. The following transactions are given to you:
- | | |
|----------|---|
| Poush 1 | Cash in hand Rs 20, 000 and bank balance Rs 30,000. |
| Poush 4 | Purchased goods and paid buchequeRs 2, 500. |
| Poush 8 | Withdrawn cash Rs 2, 000 for office use. |
| Poush 9 | Cash deposited into bank Rs 8, 000. |
| Poush 10 | Purchased machinery and paid through chequeRs 3, 000. |
| Poush 12 | Paid for stationery Rs 500. |
| Poush 15 | Received cash Rs 1, 500 from Manisha and deposited into bank. |
| Poush 22 | Paid wages Rs 300. |
| Poush 25 | Goods sold Rs1, 500 and received cheque. |
- Required:** Double column cash book cash and bank column

7. The following cash and banking transactions are given to you
- | | |
|-----------|--|
| Falgun 1 | Cash in hand Rs.5, 000 and cash at bank(Credit) Rs. 25, 000. |
| Falgun 12 | Received a cheque of Rs. 2, 800 from Bipul after deducting Rs.200 as discount. |

- | | |
|-----------|--|
| Falgun 17 | Paid to Alex Rs. 900 in full settlement of Rs. 1, 000. |
| Falgun 22 | Cash deposited into bank Rs. 2, 300. |
| Falgun 25 | Goods sold worth Rs.4, 000 sold and received cash Rs 1, 000 and balance by cheque. |
| Falgun 28 | Paid salary Rs. 1, 200. |

Required: Triple column cash book with cash, bank and discount column.

8. The following transactions are given to you.
- | | |
|------------|---|
| Chaitra 1 | Cash in hand Rs 5, 000 and cash at bank(Credit) Rs. 20, 000. |
| Chaitra 2 | Cash sales Rs. 5, 000 |
| Chaitra 5 | Cash deposited into bank Rs. 3, 000. |
| Chaitra 10 | Issued a cheque of Rs. 5, 800 to Tarashma after deducting discount Rs. 200. |
| Chaitra 15 | Received a cheque of Rs. 2, 900 from Jusbin after deducting discount Rs. 100 and deposited into bank on the same day. |
| Chaitra 20 | Withdrawn Rs. 3, 000 from bank for office use. |
| Chaitra 20 | Paid electricity charge Rs.400. |
- Required:** Triple column cash book.

9. The following transactions are given to you
- | | |
|------------|---|
| Baisakh 1 | Cash in hand Rs 8, 000 and cash at bank Rs. 15, 000. |
| Baisakh 4 | Bought goods through chequeRs. 9, 000. |
| Baisakh 8 | Received cash Rs. 7, 000 from Manisha in full settlement of Rs. 5, 000. |
| Baisakh 12 | Paid miscellaneous expenses Rs. 3, 000. |
| Baisakh 16 | Cash withdrawn from bank for personal use Rs. 1, 000. |
| Baisakh 20 | Received cash from RiteshRs 5, 100 after deducting 15% discount. |
- Required:** Triple column cash book.

10. The following transactions are given to you

- | | |
|-----------|---|
| JESTHA 1 | Cash in hand Rs 50, 000 and cash at bank Rs. 75, 000. |
| JESTHA 4 | Cheque received being sale of goods Rs. 20, 000. |
| JESTHA 8 | Cash deposited into bank Rs. 6, 000 |
| JESTHA 12 | Issued a cheque of Rs.4700 to Prabin in full settlement of Rs.5, 000. |
| JESTHA 16 | Received Rs 2, 500 from a debtor as cash. |

JESTHA 20 Issued a cheque of Rs 20, 000 for payment of salary of the month JESTHA.

Required: Triple column cash book.

11. The following cash and banking transaction are given to you.

2071 Poush 1 Cash in hand Rs. 975 and cash at bank RS. 5, 950.
2071 Poush 5 Bought goods and paid by cash Rs. 800 and by cheque RS. 1, 200.
2071 Poush 9 Paid Srijana's account Rs. 1,000 after deducting 5% discount.
2071 Poush 16 Cash sales Rs.1, 250.
2071 Poush 19 Deposited into bank Rs 1, 850.
2071 Poush 25 Received a cheque of Rs. 2, 900 from Selisha after deducting discount Rs. 100.

Required: Triple column cash book.

12. The following cash and banking transactions are given to you

Magh 1 Bank balance Rs 10, 000 and cash in hand Rs. 3, 000.
Magh 2 Bought goods worth Rs. 6, 000 and paid only Rs 3, 000 by cheque.
Magh 4 Paid to Ritesh Rs.1, 500 and received discount Rs. 50.
Magh 6 Withdrawn cash Rs 800 from bank for office use.
Magh 8 Cash purchase Rs. 500.
Magh 10 Cash deposited into bank Rs 2, 000.
Magh 20 Received Rs 2, 900 after deducting discount Rs. 100.

Required: Triple column cash book with cash, bank and discount column.

13. Following information are given:

- i. Overdraft as per pass book Rs. 20,000
- ii. Cheque issued but not presented for payment into bank Rs. 5,000
- iii. Cheque paid into bank for collection but dishonored by the bank Rs. 3,000
- iv. Direct payment made by the bank and debited in pass book only Rs. 7,000
- v. Cheque paid into bank but not credited by bank Rs. 4,000
- vi. A customer directly deposited into bank Rs. 6,000

Required: Bank Reconciliation Statement

14. Following information are given:

- a) Balance as per cash book Rs.40, 000.
- b) Interest allowed by bank but not entered in cash book Rs.1, 500.
- c) Insurance premium paid by the bank as per the instruction Rs. 500.
- d) Cash paid into bank but not recorded in cash book Rs. 5, 000.

e) Bank charge debited in pass book only Rs.100.

f) Cheques of Rs.7, 500 issued to the bank but a cheque of Rs.5, 000 only presented for payment.

Required: Bank Reconciliation Statement

15. The following informations are given to you:

8/07/2070 Sold on credit to Kamana Fancy Store.
5 pcs T-shirts @ Rs. 400 each.
10 pcs Jacket @ Rs. 3,000 each.
(Less: 20% trade discount)
16/07/2070 Sold on credit to Rageela Fancy shop.
20 pcs Sarees @ Rs. 5,500 each.
15 pcs Trousers @ Rs. 150 each.
23/07/2070 Sold on cash to Kisan Clothing Store.
100 pcs Shorts @ Rs. 250 each

Required: a. Sales book b. Sales account

16. The following informations are given to you:

5/07/2071 Purchased from Bhadrakali Sports centre, Kathmandu on credit.
40 pcs table tennis bat @ Rs. 600 each.
2 doz on basket ball @ Rs.750 each.
(Less: 5% trade discount)
6/07/2071 Purchased from Khushi Sports Supplies, Lalitpur on credit.
20 pcs cricket bat @ Rs. 800 each. (Less: 3% trade discount)
500 pcs shuttle cock @ Rs. 20 each.
10/07/2071 Purchased from Sallaghari Sports centre, Bhaktapur on credit.
100 pcs tennis ball @ Rs. 10 each.
5 pcs Jabulani football @ Rs.750 each.
(Less: 5% trade discount)

Required: a. Purchase book b. Purchase account

D.A.V. SUSHIL KEDIA VISHWA BHARATI
SECONDARY SCHOOL

Dashain Home Assignment

Class- XI

SUBJECT: BOTANY

1. Answer in very short.
 - a) Define taxonomy.
 - b) What do you understand by systematics?
 - c) Define binomial nomenclature.
 - d) Who gave five kingdom classification?
 - e) Which kingdom includes prokaryotic organisms?
 - f) What are reserve food materials of fungi?
 - g) Name the photosynthetic pigments found in Cyanobacteria.
 - h) What is the function of chondroid?
 - i) Which cell organelle is known as dictyosome?
 - j) What do you understand by ergastic substance?
 - k) Define totipotency.
 - l) Who proposed cell theory?
 - m) Which cell organelle is related with cell plate formation during cell division?
 - n) Define incipient nucleus.
 - o) What is the function of ribosome?
 - p) In which part of mitochondria oxidative phosphorylation occurs?

2. Answer in short.
 - a) List down rules for writing scientific names.
 - b) Differentiate between Gram positive and Gram negative bacteria.
 - c) List down diagnostic characteristics of Kingdom-Plantae.
 - d) Explain golgicomplex , their structure and functions.
 - e) Explain Steward's experiment of regeneration of plantlets from phloem.
 - f) Differentiate between smooth and rough Endoplasmic reticulum.

3. Answer in detail
 - a) Explain all three types of plastids.(diagram, structure and functions).
 - b) Explain different types of nutrition found in bacteria.
 - c) Explain structure and functions of mitochondria. Differentiate between mitochondria and chloroplasts.

DASHAIN HOME ASSIGNMENT

XI

Very Short Questions (Compulsary for All student)

1. State Charle's Law.
2. Explain why climbers carry oxygen cylinder during mountaineering?
3. What is universal gas constant. Give its SI unit?
4. Why gases do not settle at the bottom of container?
5. 350ml of gas at 27°C was cooled to 5°C without change in pressure. Calculate the contraction in volume.
6. 500 ml of oxygen were collected at 25°C and 632Nm^{-2} pressure. Calculate its volume at NTP.
7. The density of a gas is 1.76gm/l at 750mm pressure and 30°C. What is the molecular mass of the gas?
8. What do you mean by absolute zero and absolute scale of temperature?
9. State Dalton's law of partial pressure.
10. Plot a graph of a) P vs V b) D vs P c) PV vs V d) PV vs P
11. Differentiate between isotopes and isobars.
12. Name the isotopes of hydrogen which
a) is radioactive b) contains no neutron c) is also called heavy hydrogen
13. What are subatomic particles? Justify their naming.
14. What is fractional atomic mass?
15. Write down the limitations of Rutherford atomic model.
16. Why did Rutherford use gold during α -scattering experiment?
17. Explain why an electron never falls inside the nucleus.
18. What do you mean by quantization of angular momentum?
19. Give the main drawbacks of Bohr's atomic model.
20. State Bohr's Bury rule.
21. Create a table of different spectral series of hydrogen spectrum showing their regions, higher orbit as well as lower orbit.
22. What are quantum numbers? List them.
23. Which quantum number gives you idea about;
a) energy associated with electron b) spin of electron
c) shape of path of electron d) orientation of electron e) nature of orbit
24. What are the n, l and m values for electron in second energy level?
25. Designate the subshell when;
a) $n=4, l=2$ b) $n=5, l=3$ c) $n=1, l=0$ d) $n=2, l=1$
26. What happens when sal ammoniac is treated with lime water? Show with suitable reaction.
27. Write the principle of manufacture of ammonia by Haber's process with suitable reaction.
28. List the conditions for maximum yield of ammonia.
29. How is urea obtained from ammonia? Show reaction.
30. How does ammonia react with;
a) Mercurous nitrate paper b) excess Cl_2
31. Describe the principle of manufacture of nitric acid by Ostwald's process.
32. What is the reason behind the oxidation property of nitric acid? What factors affect its reduction product?
33. What happens when;
a) Mg is treated with very dilute HNO_3 ?
b) Fe is treated with conc. HNO_3 ?
34. What is aqua-regia? Show the reaction of gold with aqua-regia.
35. State Modern periodic law.

36. Define periodicity. Write its main cause.
37. Define isoelectronic species with suitable examples.
38. Compare the size of F^- and Na^+ with Ne.
39. What do you mean by ionization energy?
40. Which one has greater ionization energy and why? N or O.
41. Differentiate between ionization energy and electron affinity
42. Differentiate between electron affinity and electronegativity.
43. Explain why halogens have highest electron affinity?
44. Which one has higher electron affinity, F or Cl? Give reason.
45. State Mendeleev's periodic law.

Shorts Questions (Extra Assignments Only for Failed Students)

1. Derive the relation $PV=nRT$.
2. State and explain Graham's law of diffusion. Mention its any two applications.
3. Describe Rutherford's experiment of α -particles scattering.
4. What were the observations and conclusions made by Rutherford based upon his experiment.
5. Write down the main postulates of Bohr's atomic model. Describe the origin of hydrogen spectra given by Bohr's. Draw the diagram for different spectral series of hydrogen spectrum.
6. Write short notes on:
 - a) Quantum numbers
 - b) Pauli's exclusion principle
7. What are the advantages of modern periodic table? Describe.
8. Describe the factors affecting ionization energy.
9. Classify the elements on the basis of different blocks. Write two features of each block.
10. Describe the manufacture of ammonia by Haber's process.
11. Describe the manufacture of nitric acid by Ostwald's process.
12. How does ammonia react with
 - a) Na on heating
 - b) $CuSO_4$ solution till excess
 - c) CuO
 - d) $FeCl_3$ solution
 - e) Mg on heating
13. What happens when;
 - a) Zinc is treated with conc. HNO_3
 - b) H_2S is reacted with dilute HNO_3
 - c) HI is reacted with conc. HNO_3
 - d) P_4 is treated with conc. HNO_3
 - e) S_8 is treated with conc. HNO_3

Numerical

1. The mass of 525cc of a gaseous compound at $28^\circ C$ and 730mm of Hg pressure was found to be 0.9gm. What will be the volume of 2gm of the gas at $30^\circ C$ and 760mm of Hg pressure. [$R=0.0821 \text{ L atm Mol}^{-1} \text{ k}^{-1}$]
2. How much increase in temperature is necessary to increase volume of half litre of the gas by 40% at $25^\circ C$, keeping the pressure constant?
3. An evacuated glass vessel weighs 50gm when empty, 148gm when filled with liquid of density 0.09g/cc and 50.5g when filled with an ideal gas at 760mmHg at $27^\circ C$. Calculate the volume of ideal gas at STP.
4. A saturated hydrocarbon having molecular formula C_nH_{2n+2} diffuses through a porous membrane twice as fast as sulphur dioxide. Calculate the volume occupied by the hydrocarbon at $27^\circ C$ and 2 atm pressure.

Economics

Vacation Home Assignment

Class XI

Use a loose sheet (A4 size paper) separately for each question:

1. Visit <http://www.tepc.gov.np/> and enlist the top ten export items and top ten import items of Nepal along with their amount.
2. Visit your nearby grocery shops and prepare a list of 15 major items along with their prices of two time period--during Dashain and after one week of Dashain. Write your comment in a paragraph comparing those prices.
3. Prepare a list of seven provinces in the country's new federal system and write down the related districts of each province.
4. Visit <https://www.nrb.org.np/> and click on current macroeconomic & financial situation (more...) and copy the latest situation of foreign employment and remittance report and get a print out of these statistics.
5. Compare three definitions of economics--Wealth Definition, Welfare Definition and Scarcity Definition-- in single table.
6. Search in internet about the US and China Trade War. Select a suitable article and read it. Write a paragraph of comment on the issue.
7. Differentiate between microeconomics and macroeconomics (at least 10 points).

DAVSKVB Secondary School

Jawalakhel

Dashain Home Assignment

Class: XI

Subject: Major English

1. Write an essay on "Elizabethan Drama".
2. Write short notes on "Sonnet".
3. Write a critical analysis of the poem "When Icicles Hang by the Wall".

Best of Luck

(SUBJECT: MATHEMATICS)

- Define limit of a function at a point.
- Evaluate
 - $\lim_{x \rightarrow 4} \frac{x^2-16}{\sqrt{3x+4}-4}$
 - $\lim_{h \rightarrow 0} \frac{\sqrt{x+h}-\sqrt{x}}{h}$
 - $\lim_{x \rightarrow \infty} \sqrt{x}(\sqrt{x+1}-\sqrt{x})$
- Prove that $\lim_{x \rightarrow 0} \sin x = 0$ geometrically
- Evaluate
 - $\lim_{x \rightarrow 0} \frac{\cos ax - \cos bx}{\sin ax - \sin bx}$
 - $\lim_{x \rightarrow a} \frac{x^5 - a^5}{x^4 - a^4}$
 - $\lim_{x \rightarrow \theta} \frac{x \tan x - \theta \tan \theta}{x - \theta}$
 - $\lim_{x \rightarrow \theta} \frac{x \cot x - \theta \cot \theta}{x - \theta}$
 - $\lim_{x \rightarrow 1} \frac{1 + \cos \pi x}{\tan^2 \pi x}$
 - $\lim_{x \rightarrow \frac{\pi}{4}} \frac{\sec^2 x - 2}{\tan x - 1}$
 - $\lim_{x \rightarrow 0} \frac{|x|}{x}$
 - $\lim_{x \rightarrow \frac{\pi}{2}} \frac{1 + \cos 2x}{(\pi - 2x)^2}$
- A function $f(x)$ is defined in (0.3) in the following way $f(x) = \begin{cases} x^2, & 0 < x < 1 \\ x, & 1 \leq x < 2 \\ \frac{1}{4}x^3, & 2 \leq x < 3 \end{cases}$. Show that $f(x)$ is continuous at $x=1$ and $x=2$.
- Find the value for constant number $g(x) = \begin{cases} ax + 5, & \text{if } x \leq 2 \\ x - 1, & \text{if } x > 2 \end{cases}$ at $x=2$
- Evaluate
 - $\lim_{x \rightarrow \infty} \frac{\sqrt{x^2+1}}{x+1}$
 - $\lim_{x \rightarrow 2} \frac{x^n - 2^n}{x - n} = 80$, find n
 - $\lim_{x \rightarrow \infty} (x - \sqrt{x^2 + x})$
 - $\lim_{\theta \rightarrow \frac{\pi}{4}} \frac{\cos \theta - \sin \theta}{\theta - \frac{\pi}{4}}$
 - $\lim_{x \rightarrow c} \frac{\sqrt{x} - \sqrt{c}}{\sin x - \sin c}$
 - $\lim_{x \rightarrow 0} x \sin \frac{1}{x}$
 - $\lim_{y \rightarrow 0} \frac{(x+y) \sec(x+y) - x \sec x}{y}$
- Define the terms
 - LHL and RHL
 - continuity and discontinuity
- State and prove De-Morgan's law.
- Prove the following.
 - $A - (B \cap C) = (A - B) \cup (A - C)$
 - $A \Delta B = (A - B) \cup (B - A)$
 - $A \cup ((B \cap C)) = (A \cup B) \cap (A \cup C)$
- For any two real numbers x and y . Prove
 - $|x+y| \leq |x| + |y|$
 - $|x-y| \geq |x| - |y|$
- Solve the following inequalities
 - $6 + 5x - x^2 \geq 0$
 - $|x+2| < 4$
- If x belongs to \mathbb{R} and 'a' be any positive real number then $|x| < z \Rightarrow -a < x < a$ and conversely.

XI Science

14. Define function, domain, range, onto, one to one function.
15. Let a function: $A \rightarrow B$ defined by $f(x) = \frac{x+1}{2x-1}$ with $A = \{-1, 0, 1, 2, 3, 4\}$ and $B = \{-1, 0, \frac{4}{5}, \frac{5}{7}, 1, 2, 3\}$. Find the range of f. Is the function f one-one and onto both? If not, how can the function be made one-one and onto both?
16. Define
 - a. Inverse of a matrix
 - b. triangular matrix
 - c. symmetric matrix
 - d. skew symmetric matrix
 with examples
17. Construct a 3×3 matrix whose elements are $a_{ij} = i+2j$
18. Construct a 3×2 matrix whose elements a_{ij} are given by $a_{ij} = 3j-i$.
19. If $A = \begin{bmatrix} 2 & -3 \\ 4 & 6 \\ -5 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 6 & 0 \\ -2 & 3 \\ 1 & -4 \end{bmatrix}$, find a matrix X such that $2A+3X=5B$
20. If $A = \begin{bmatrix} 1 & 2 & 2 \\ 2 & 1 & 2 \\ 2 & 2 & 1 \end{bmatrix}$, show that $A^2-4A-5I=0$ where I is 3×3 unit matrix
21. Let $A = \begin{pmatrix} 1 & 2 \\ 3 & 8 \end{pmatrix}$ be a 2×2 matrix.
 Show that $AA^{-1} = A^{-1}A = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$
22. Express the following matrix in the sum of symmetric and skew symmetric matrix.

$$\begin{pmatrix} 2 & 7 & -1 \\ -1 & 0 & -5 \\ 9 & -9 & -9 \end{pmatrix}$$
23. Evaluate the following determinant by expanding
 - a. $\begin{vmatrix} a & h & g \\ h & b & f \\ g & f & c \end{vmatrix}$
 - b. $\begin{vmatrix} 2 & 0 & -2 \\ -3 & 4 & 1 \\ 6 & -1 & 3 \end{vmatrix}$
24. Without expanding, prove that
 - a. $\begin{vmatrix} 1 & bc & b+c \\ 1 & ca & c+a \\ 1 & ab & a+b \end{vmatrix} = \begin{vmatrix} 1 & a & a^2 \\ 1 & b & b^2 \\ 1 & c & c^2 \end{vmatrix}$
 - b. $\begin{vmatrix} 1 & a & a^2 - bc \\ 1 & b & b^2 - ac \\ 1 & c & c^2 - ab \end{vmatrix} = 0$
25. Show that: $\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ a^3 & b^3 & c^3 \end{vmatrix} = (b-c)(c-a)(a-b)(a+b+c)$
26. If a, b, c are all different and $\begin{vmatrix} a & a^2 & a^3 + 1 \\ b & b^2 & b^3 + 1 \\ c & c^2 & c^3 + 1 \end{vmatrix} = 0$ prove that $abc = -1$
27. Show that $\begin{vmatrix} p+x & q & r \\ p & q+y & r \\ p & q & r=z \end{vmatrix} = xyz \left(1 + \frac{p}{x} + \frac{q}{y} + \frac{r}{z} \right)$

For Failure students

1.
 - a) Define power set. Write the power set of $A = \{x, y, z\}$
 - b) Rewrite $|2x-1| \leq 5$ without using absolute value sign.
 - c) Let $A = \{a, b\}$, $B = \{b, c\}$ and $C = \{c, d\}$. find $(A \times B) \cup (A \times C)$
2.
 - a) Define one to one and onto function.
 - b) Let $A = \{-1, 0, 2, 4, 6\}$ and a function $f: A \rightarrow R$ is defined by $f(x) = \frac{x}{x+2}$. Find the range of f.
 - c) Define diagonal matrix with example.
3.
 - a) If $A = \begin{pmatrix} 1 & 2 \\ 3 & 1 \end{pmatrix}$, show that $A^2-2A-5I=0$ where I be a 2×2 unit matrix and O be the 2×2 null matrix.
 - b) Evaluate by Sarrus rule or other: $\begin{vmatrix} 16 & 19 & 23 \\ 15 & 18 & 22 \\ 13 & 17 & 20 \end{vmatrix}$
 - c) Evaluate: $\lim_{x \rightarrow a} \frac{x^2 - a^2}{x^3 - a^3}$

XI Science

4. a) Evaluate $\lim_{x \rightarrow \infty} (\sqrt{3x} - \sqrt{x-5})$
 b) Evaluate: $\lim_{x \rightarrow 1} \frac{\log x}{x-1}$
 c) Find the limit if it exists: $\lim_{x \rightarrow 0} \frac{|x|}{x}$
5. a) Evaluate: $\lim_{x \rightarrow p} \frac{x^2-p^2}{\tan(x-p)}$
 b) Evaluate: $\lim_{x \rightarrow 0} \frac{e^{3x}-1}{x \cdot 5^x}$
 c) Solve the linear equation by inverse matrix method
 $3x+2y=4$
 $x-2y=0$

Group B

[5×2×4=40]

6. a) In a group of student, 18 read biology, 19 read chemistry, and 16 read physics. 6 read biology only, 9 read chemistry only, 5 read biology and chemistry only and 2 read chemistry and physics only.
 i. How many read all three subjects?
 ii. How many read biology and physics only?
 iii. How many read physics only?
 iv. How many students are there all together?

OR

Define conjunction. Construct truth table for compound statements. $(\sim p \wedge q) \Rightarrow (p \vee q)$

- b) If A, B and C be the subset of a universal set U. Show that
 i. $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ ii. $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$
7. a) Define absolute value. If x and y be two real numbers. Then show that
 i. $|x+y| \leq |x| + |y|$
 ii. $|x-y| \geq |x| - |y|$

b) Prove that
$$\begin{vmatrix} a-b-c & 2a & 2a \\ 2b & b-c-a & 2b \\ 2c & 2c & c-a-b \end{vmatrix} = (a+b+c)^3$$

OR

Prove that
$$\begin{vmatrix} x^2+1 & xy & xz \\ xy & y^2+1 & yz \\ xz & yz & z^2+1 \end{vmatrix} = 1+x^2+y^2+z^2$$

8. a) Without expanding the determinant show that
$$\begin{vmatrix} 1 & a^2 & a^3 \\ 1 & b^2 & b^3 \\ 1 & c^2 & c^3 \end{vmatrix} = \begin{vmatrix} a^2 & bc & a \\ b^2 & ca & b \\ c^2 & ab & c \end{vmatrix}$$

 b) Solve the following system by Cramer's rule.
 $x+2y-3z=9$
 $2x-y+2z=-8$
 $3x-y-4z=3$

9. a) Find the inverse of
$$\begin{bmatrix} 1 & 2 & -1 \\ 2 & 0 & 1 \\ 0 & 3 & -1 \end{bmatrix}$$

b) Evaluate: $\lim_{x \rightarrow \theta} \frac{x \sin \theta - \theta \sin x}{x-\theta}$

OR

Evaluate: $\lim_{x \rightarrow 2} \frac{x-\sqrt{8-x^2}}{\sqrt{x^2+12}-4}$

10. a) A function f(x) is defined as $f(x) = \begin{cases} x^2 - 5 & \text{for } x < 4 \\ 8 & \text{for } x = 4 \\ 2x + 3 & \text{for } x > 4 \end{cases}$.

Show that the function is discontinuous at x=4. Is it possible to make it continuous at x=4. If possible, how?

- b) Find the derivative of $\sqrt{1+x^2}$ from the first principle

Group C

[5×6=30]

11. Define function. find the domain and range of the function: $y = \sqrt{x^2 - 2x - 8}$

OR

Let a function f: A→B be defined by $f(x) = \frac{x+1}{2x-1}$ with $A = \{-1, 0, 1, 2, 3, 4\}$ and $B = \{-1, 0, \frac{4}{5}, \frac{5}{7}, 1, 2, 3\}$. Find the range of f. Is the function f one-one and onto both?

XI Science

12. Define symmetric matrix. Prove that $\begin{vmatrix} a & b & ax + by \\ b & c & bx + cy \\ ax + by & bx + cy & 0 \end{vmatrix} = (b^2 - ac)(ax^2 + 2bxy + cy^2)$
13. Evaluate: $\lim_{y \rightarrow 0} \frac{(x+y) \sec(x+y) - x \sec x}{y}$
14. Define composite function. Prove that a function $f: \mathbb{R} \rightarrow \mathbb{R}$ defined by $f(x) = x^3$ is one-one and onto.
15. Find the derivative of $\tan x$ by first principle.

HAPPY DASHAH AND 79 HAR

DASHAIN HOME ASSIGNMENT

XI

Group A (Compulsory for all students)

1. Define linear and superficial expansion. Derive a relation between them.
2. If $\vec{A} = 4\hat{i} + 3\hat{j} + 3\hat{k}$ and $\vec{B} = 2\hat{i} + 3\hat{j} + 4\hat{k}$, find the angle between \vec{A} and \vec{B} .
3. A force expressed in vector notation as $\vec{F} = 4\hat{i} - 7\hat{j} - 3\hat{k}$ is applied on a body and produces a displacement (in meter) $\vec{D} = 3\hat{i} - 2\hat{j} - 5\hat{k}$ in 4 seconds. Estimate the (i) workdone (ii) power
4. Determine the temperature at which wood will just sink in the benzene if the density of benzene at 0°C and cubical expansivity are $9 \times 10^2 \text{kgm}^{-3}$ and $1.2 \times 10^{-3} \text{K}^{-1}$ respectively. The density of wood at 0°C and cubical expansivity are $8.8 \times 10^2 \text{kgm}^{-3}$ and $1.5 \times 10^{-4} \text{K}^{-1}$ respectively.
5. At what position an object is placed in front of a concave mirror of radius of curvature 0.4m so that an erect image of magnification 3 is produced.
6. A pole 4m long is laid along the principal axis of a convex mirror of focal length 1m. The end of the pole nearer the mirror is 2m from it. Find the length of the image of the pole.
7. A hollow spherical conductor of radius 12cm is charged to $6 \times 10^{-6} \text{C}$. Find the electric field strength at the surface of the sphere, inside the sphere at 8cm and at a distance 15cm from the sphere [$\epsilon_0 = 8.85 \times 10^{-12} \text{C}^2 \text{m}^{-2} \text{N}^{-1}$]
8. Two point charges each of $3 \times 10^{-7} \text{C}$ are placed in the two corners of an equilateral triangle whose side is 1m. What is the electric field at the third corner of the triangle due to these charges?
9. Explain Pullinger's method to determine the linear expansivity of a conductor.
10. Derive the mirror formula in case of a concave mirror. Also discuss the nature of the image formed due to object placed at different positions.
11. Define real and apparent expansion of liquid. Derive a relation between the coefficient of real and apparent expansion of liquid.
12. The magnitude of two vectors are 3 and 4 and their scalar product is 6. What is the angle between them?
13. Two vectors \vec{A} and \vec{B} are such that $\vec{A} - \vec{B} = \vec{C}$ and $A - B = C$. Find the angle between them.
14. What is the temperature of the vacuum?
15. When a metallic block with a hole in it is heated, why does not the material around the hole make it smaller?
16. Does the coefficient of linear expansion depend on initial length?
17. A stick partially dipped in water seems to be bent. Why?
18. Why does diamond sparkle with great brilliancy?
19. Why are convex mirrors used in cars for rear view?
20. Can two balls having the same kind of charge attract to each other?
21. Define relative permeability of a medium?
22. A body is projected horizontally from the top of a tower 100 m high with a velocity of 9.8 m/s. Find the velocity with which it hits the ground.
23. A projectile is fired from the ground level with velocity 500 m/s at 30° to the horizontal. Find its horizontal range, the greatest vertical height to which it rises and the time to reach the greatest height. What is the least speed with which it could be projected in order to achieve the same horizontal range?
24. A projectile is fired with a velocity V and making an angle θ with the horizontal. Derive expressions for the maximum height gained, the time of flight and the horizontal range.

Dashain Vacation Homework

Class XI Zoology

Short Questions

1. In what ways living organism different from non-living.
2. Mention the fields of zoology.
3. What are the scopes of biology.
4. How is biological science related to physical science.
5. Describe the Miller Urey experiment.
6. Discuss the most accepted theory in origin of life.
7. Discuss the habit and habitat of Paramecium.
8. Sketch the well-labelled figure of Paramecium.
9. Discuss the binary fission in Paramecium.
10. Discuss the external feature of Paramecium.
11. Give the structure and function of Trichocyst.
12. Mention the process of autogamy.
13. Draw well labelled diagrams showing the conjugation. (No description).
14. Point out the significances of conjugation.
15. Explain liver schizogony in life cycle of malarial parasite.
16. Discuss the erythrocytic schizogony in malarial parasite.
17. discuss the various control measures of malarial parasite.
18. Sketch the well-labelled figure of asexual cycle that takes place in malarial parasite.
19. Write short note on mosquito malaria relationship
20. Discuss the oocyst formation and sporogony in Plasmodium.

Very short questions

- a. What is inoculation?
- b. What do you mean by intermediate host?
- c. Define the term incubation period.
- d. List the various symptoms of malaria.
- e. Define the term: Encystment, Sporogony, schizogony.
- f. What is exflagellation.
- g. What is haemozoin?
- h. Mention the different species of malarial parasite.
- i. What is the necessity of alternative host in the life of a parasite?
- j. Why Paramecium is called slipper animalcule?
- k. Name the two types of nucleus found in Paramecium.
- l. Mention the function of cilia.
- m. Give the function of trichocyst.
- n. What is cyclosis?

- o. What is conjugation?
- p. Give the function of contractile vacuole and food vacuole.
- q. What is evolution?
- r. How old is earth?
- s. What is organic evolution?
- t. What do you mean by reducing atmosphere?
- u. Define coacervates.
- v. What does Miller and Urey Experiment suggest.
- w. What were the sources of energy in primitive earth?
- x. What is connecting link?
- y. Where did life first originate?
- z. What is Oparin concept about origin of life?

HAPPY DASHAIN, TIHAR, CHHAT