# Specification Grid for first Terminal Examination

## Sub: Optional science Class: 10 F.M:50 P.M:20

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| N | AREA | TOPICS | K | U | A | HA | REMARKS |
| 1 | PHYSICS | Force pressure | 3x1 | 3x2 | 1x3 | 1x4 | 16 |
| 2 | CHEMISTRY | Atomic structure Periodic table and periodic  law | 3x1 | 3x2 | 1x3 | 1x4 | 16 |
| 3 | BIOLOGY | **B**iomolecules | 3x1 | 2x2 | 1x3 | 1x4 | 14 |
| 4 | GEOLOGY AND ASTRONOMY | The earth | 1x1 |  | 1x3 |  | 4 |
|  |  | TOTAL QUESTIONS | 10 | 8 | 4 | 3 | 25 |
|  |  | TOTAL MARKS | 10 | 16 | 12 | 12 | 50 |

K = Knowledge

U=Comprehension/Understanding A = Application

H.A = Higher ability (Analysis, Evaluation and Creation)

EMBOCS NAWALPARASI

FIRST TERMINAL EXAMINATION-2081

SUB: optional science TIME:2 HOURS F.M:50

CLASS: 10 P.M:20

GROUP A (10x1=10 )

1. Define vector quantity.
2. What is the normal pressure at the sea level?
3. States Hooke’s law.
4. Write down the Avogadro’s number.
5. Define electron affinity.
6. What is principle quantum number?
7. What are enzymes?
8. How many types of essential amino acid are found in nature?
9. Write one importance of nucleic acids.
10. Define half life.

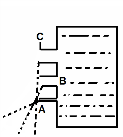
GROUP B (8X2=16)

1. Write down two differences between centripetal and centrifugal force.
2. Write the formula to calculate escape velocity and also write the value of escape velocity for earth.
3. Water spider can walk easily on the surface of water . Why?
4. Calculate the number of moles in 7 gram of nitrogen atom?
5. Why hydrogen is kept in group IA?
6. What happens to the atomic radius of elements while moving from top to bottom? Also mention the reason.
7. Difference between essential and non essential amino acids.
8. Egg is considered as reference protein.why?

GROUP C(4x3=12)

1. Find the gravitational field intensity at the height of 3600km from the earth surface. The radius of the earth is 6400 km and its mass is 6x1024 kg.
2. How does atomic radius changes from left to right in a period?
3. Explain in brief about the importance of enzymes.
4. Describe the radio carbon dating method.

GROUP D (3X4=12)

1. Observe the given figure and answer the following questions.
   1. From three Tap A, B & c, from which tap water comes with greater force and why?
   2. Write down any two differences between liquid pressure and solid pressure.
2. What is the molarity of a solution that contain 3.65 grams of pure HCl in 10 litre of solution?
3. What are the types of carbohydrates? Write about them and give the importance of consuming carbohydrates.

THE END

# Specification Grid for SECOND Terminal Examination

## Sub: Optional science Class: 10 F.M:50

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| S.N | AREA | TOPICS | K | U | A | HA | REMARKS |
| 1 | PHYSICS | Force Pressure Energy Heat | 3x1 | 3x2 | 1x3 | 1x4 | 16 |
| 2 | CHEMISTRY | Atomic structure  Periodic table &periodic law Chemical bonding  Electrochemistry | 3x1 | 3x2 | 1x3 | 1x4 | 16 |
| 3 | BIOLOGY | Biomolecules Cell biology | 3x1 | 2x2 | 1x3 | 1x4 | 14 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 4 | GEOLOGY AND ASTRONOMY | The earth The universe | 1x1 | - | 1x3 | - | 4 |
|  |  | TOTAL QUESTIONS | 10 | 8 | 4 | 3 | 25 |
|  |  | TOTAL MARKS | 10 | 16 | 12 | 12 | 50 |

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H.A = Higher ability (Analysis, Evaluation and Creation)

EMBOCS NAWALPARASI

SECOND TERMINAL EXAMINATION-2081

SUB: optional science TIME:2 HOURS F.M:50

CLASS: 10 P.M:20

GROUP A (10x1=10)

1. What is centre of gravity?
2. State Hooke’s law.
3. Define briquettes.
4. State Afbau principle.
5. What is sigma bond?
6. What will be the PH value of strongest base?
7. How many essential amino acids are found in nature?
8. In which stage crossing over takes place?
9. What is casparian thickening?
10. What do you mean by age of rocks?

**Group-B** (8x2=16 )

1. Write any two differences between centrifugal and centripetal force.
2. Write down any two advantages of hydroelectricity.
3. Latent heat of fusion is called latent heat of melting why?
4. State Avogadro’s law. Write down Avogadro’s number.
5. What is ionic product of water? Calculate PH of solution whose hydrogen ions concentration is 10-4 m/l.
6. Draw the molecular structure of NaCl.
7. Write down any two importance of biomolecules in our daily life.
8. What are the functions of epithelial tissue?

GROUP C(4x3=12 )

1. A hot sphere of 200 g is kept in 500 g of water at 10 degree Celsius. As a result, the final temperature of the water will be 30 degree Celsius. Find the final temperature of iron sphere. (s=470J/kgdegree Celsius)
2. Describe the resonance structure of ozone molecule.
3. Describe the internal structure of dicot root.
4. How is the age of rock determined? Which type of rock supports the organic evolution and how?

GROUP D (3x4=12)

1. On which factors liquid pressure depends? Calculate the pressure exerted by a mercury column of height 750 mm at its bottom. Given that, the density of mercury is 13.6 g/cm3 and g = 9.8 m/s2.
2. State Modern periodic law. Write the significance of modern periodic table over Mendeleeve’s periodic table.
3. What are enzymes? Describe about the functions of enzymes