ANEES HUSSAIN

EXCELLENCE IN EDUCATION SINCE 1989

CLASS: XI | SUBJECT: ENGLISH | PREPARATION PAPER 2023 - 2024 | BY: FACULTY OF ENGLISH

PREPARATION PAPER OF XI – ENGLISH FOR 2024

SECTION 'A'

(MULTIPLE CHOICE QUESTION) **20 MARKS**

Note: It Consist of seventeen MCQs. Each question carries equal marks.

SECTION B

(SHORT QUESTIONS AND ANSWERS) **40 MARKS**

MOST IMPORTANT QUESTIONS FOR THE SESSION OF 2023-24

THE DEMOCRATIC CITIZENSHIP

1. What does Pakistan mean? Who invented the name and when was it invented?
2. What was Quaid e Azam's vision about religious freedom?
3. How can we make Pakistan prosperous in the light of Quaid's vision?
4. Why was Quaid e Azam feeling honoured while addressing the first constituent assembly?
5. Which is the greatest curse according to the Quaid e Azam?
6. What are the guided principles stated by the Quaid?

ONCE MORE TO THE LAKE

7. Why does E.B White take a vacation at this particular lake?
8. Which key concerns has E.B White has expressed in the text?
9. How are boat motors different in the present situation?
10. Why does E.B White repeatedly call the lake as 'wild lake'?
11. How has the lake changed since he was a boy?
12. What is the central idea of the text?

THE NECKLACE

13. What efforts were made to find Mme? Forestier's necklace?
14. How did Mr. and Mme. Loisel replace the necklace?
15. Why did M. Loisel expect him to be pleased to receive the invitation?
16. Describe in your words how Loisel's life changed after they had paid for the new necklace?
17. How was the life of Mme? Loisel before the loss of necklace?
18. What was Mme. Foretier's reaction to seeing Mme'Loisel, she figured out who she was?
19. How had Mme. Loisel's sacrifices been in vain?

TECHNICAL REVOLUTION

20. What do you mean by technological revolution?
21. Why did information remain scarce at the time of World War II?
22. What are the benefits of E-commerce in today's world?
23. How did technology contribute in keeping people's lives safe during the recent pandemic or disaster?
24. How does technology work in environmentally risk areas?
25. How has technology greatly supported doctors and medical practioners?

MY BANK ACCOUNT

26. What is the effect on Stephen Leacock when he enters a bank to do some business and why did he decide to opn an account?
27. What mistake did Stephen Leacock make when he wrote a cheque?
28. Why was there a roar of laughter when the author left the bank?
29. Why is it wiser to keep one's money in the bank than to hoard it at one's home?
30. What is the central idea of the poem, 'The Character of a Happy Life'?

SELF RELIANCE

31. What makes a man great and strong according to Ralph Waldo Emerson?
32. What happens when a person doesn't value one's own qualities?
33. What is the mark of genius according to Ralph Waldo Emerson?

Course Coordinator: Sir Asif Iqbal
Contact No: 0321-2108729

34. How can a person be happy according to Ralph Waldo Emerson?
35. What kind of changes does a society undergo according to author?

STRUGGLE FOR AN EDUCATION

36. Why was B.T.Washington inspired to go Hampton?
37. What did B.T.Washington do in Richmond to reach Hampton city?
38. Why did B.T.Washington thank the captain of the ship?
39. What did B.T.Washington learn during work?
40. What did B.T.Washington have to go through in order to get admission at the Hampton Institute?

A VOYAGE TO THE CITY OF LIONS

41. Describe briefly the significance of Singapore port?
42. What is the geographical location of Singapore?
43. How is Singapore one of the attractive areas for tourists?
44. Why is Singapore called the fusion of the East and the West?
45. How does Singapore keep itself clean?
46. Describe briefly the education in Singapore?

CHOOSING CAREER

47. What are the differences between a job and a career?
48. Why should you choose a career that interests you?
49. What is an aptitude test? How does it help in choosing a career?
50. What is the difference between an extroverted person and an introverted person?
51. What causes demotivation in career?
52. Why is it wiser to have a backup plan?

PEARLS OF WISDOM

53. What did the wealthy man ask the poor brother and what was his reply?
54. Why could the slave not be pacified even though he was in the same boat with the king?
55. How is lucky and unlucky according to the maxim?
56. What kind of suggestion did Imam Ghazali give to the people?
57. What did the voice man do to make the slavery realize about the security of boat?
58. What kind of virtue does wanted to teach to his students?
59. How does the professional man earn respect according to the sage?

THE CHARACTER OF A HAPPY LIFE

60. Attempt to explain briefly how Sir Henry Wotton's man 'having nothing yet hath all'
61. Why does a happy man pray to God?
62. What is the central idea or theme of the poem?
63. What does the poet mean when says that a happy man does not serve another's will?
64. What a happy man is taught from his very birth?
65. What are the sources of happiness other than those mentioned in the poem?

DON'T QUIT

66. What is the poet's message in the first stanza?
67. Write the central idea of the poem, 'Don't Quit'.
68. Why does the poet term life 'twists and terns'?
69. What is the message of the poem Don't Quit?

OZYMANDIAS

70. What is the metaphor in the poem, 'Ozymandias'?
71. What did the traveller see in the desert and whom he told about it
72. What is ironic about the fate of Ozymandias?
73. What was written on the pedestal of the Statue of Ozymandias?

GOOD TIMBER

74. Why does the poet suggest people to be like good Timber?

75. What happens to the people who work hard?
76. Write central idea of the poem.
77. How can one achieve one's true potential in life according to the poem?

LUCY GRAY

78. Where did Lucy live and what kind of child she was?
79. What did Lucy mean when she said 'yonder is the moon'?
80. What efforts did Lucy parents make in finding her?
81. Briefly narrate the tragic story of Lucy Gray? OR what happened to Lucy Gray when she was going to the town
82. What led Lucy's parents to the bridge?
83. What do people still maintain about Lucy Gray and why?

THE ABBOT OF CANTERBURY

84. What was the dispute between the King and the Abbot? OR why was king John hostile to the Abbot and what charges were laveled against him?
85. How were the answers to the questions given to King John by the shepherd?
86. What three questions were asked by the king to the Abbot of Canterbury?
87. How was the Abbot benefited by his shepherd's bold answers?
88. What is the main idea of the poem?

SUR KHAHORI

89. 62 .What reward does a Khahori get after his hard work?
90. 63. How is Khahori's character depicted by the poet?
91. 64. Where and why do Khahoris spend their days and nights?
92. 65. What dos the poet want to say when he says "Where not a trace of birds is seen, fire is lit"?

PLAY – A VISIT TO A SMALL PLANET

93. What extraordinary powers does Kreton possess, and how does he exhibit these powers?
94. How is Kreton able to communicate with the people on earth?
95. Why was Kreton interested in visiting the planet "Erath"?
96. What is ironic about Spelding's broadcast at the beginning of the play?
97. How is media depicted or portrayed in the play?
98. Why was Spelding unhappy about the relationship between Ellen and John?
99. Who is John? What does he do?
100. Why is General Powers paranoid about Kreton's visit?
101. Describe the reaction of different characters to Kreton's visit?
102. Which character in the play 'A Visit to a Small Planet' do you like most and why?
103. How did Aide describe Kreton's spaceship?

GRAMMAR SECTION

- Spot the errors in the use of Articles, preposition, adjective, verbs etc)
- Do as directed (Tenses conversion, conditional sentences, positioning adverbs, prefixes and Modal verbs)
- Active to Passive
- Direct to indirect Narrations

SECTION C

(DETAILED QUESTIONS AND ANSWERS) 40 MARKS

- **Passages**
- **Email writing**
- **Essays topics**
  - Impact of Facebook on learning and teaching at higher secondary education
  - Prosperity Lies in Peace
  - Proper Conservation of Water
  - Proper Use of Time
  - School Life vs College Life
  - physical games v/s online games
  - Books vs Mobile Phone
  - Electricity Shortage
  - Personal Business vs Employment
  - Tolerance
  - Tourism and its Impact
  - Pros and Cons of Social Media
- **CV writing**

CLASS: XI | SUBJECT: URDU | PREPARATION PAPER 2023 - 2024 | BY: SIR MUHAMMAD SAJID KHAN

مطالعاتی پرچہ اُردو لازمی برائے جماعت انٹر سال اول

حصہ ''الف'' کثیر الانتخابی سوالات (۲۰)

سوال نمبر ۱ (اس حصہ میں سوالات کا انتخاب پورے نصاب سے کیا جائے گا) (۲۰)

حصہ ''ب'' مختصر سوالات کے جوابات (۴۰)

سوال نمبر ۲: دیئے گئے غزلیات کے اشعار کی تشریح شاعر کے حوالے اور مختصر تعارف کے ساتھ کیجئے۔ (۱۰)

☆میر تقی میرؔ ☆مرزا غالبؔ ☆خواجہ میر دردؔ ☆حسرت موہانیؔ

سوال نمبر ۳: دیئے گئے اسباق کے اقتباسات کی تشریح مصنف کے حوالے اور مختصر تعارف کے ساتھ کیجئے۔ (۱۰)

☆قومی اتفاق ☆زبان گویا ☆خطوط غالب واقبال ☆کچھ ذریعہ تعلیم سے

سوال نمبر ۴: درج ذیل اہم نظموں کا مرکزی خیال شاعر کے مختصر تعارف کے ساتھ کیجئے۔ (۱۰)

☆رہے نام اللہ کا ☆چپ کی داد ☆مردِ مسلماں ☆نوائے سروش

یا

دیے گئے نظموں کے بند کی تشریح شاعر اور نظم کے حوالے کے ساتھ کیجیے۔

☆رہے نام اللہ کا ☆یارب چمن نظم کو گلزار ارم کر ☆مردِ مسلماں

سوال نمبر ۵: درج ذیل میں سے کسی ایک سبق کا خلاصہ اور مصنف کا مختصر تعارف کیجئے۔ (۱۰)

☆بیگم کی بلی ☆زیور کا ڈبہ ☆میدان جنگ ☆بابا نور

حصہ ''ج'' (بیانیہ جواب کے سوالات) (۴۰)

سوال نمبر ۶: مندرجہ ذیل میں سے کسی ایک شاعر کے کلام کی خصوصیات پر تبصرہ کیجئے۔ (۲۰)

☆میر تقی میرؔ ☆مرزا غالبؔ ☆خواجہ میر دردؔ ☆نظیر اکبر آبادیؔ

سوال نمبر ۷: مندرجہ ذیل میں سے کسی ایک نثر نگار کے طرزِ تحریر کی خصوصیات پر تبصرہ کیجئے۔ (۲۰)

☆سر سید احمد خان ☆خواجہ حسن نظامی ☆منشی پریم چند ☆آغا حشر کاشمیری

-یا-

مندرجہ ذیل میں سے کسی ایک عنوان پر مضمون لکھیے۔

☆قیام امن میں تعلیم کا کلیدی کردار ☆کشمیر پاکستان کی شہ رگ ہے

☆معاشرے میں سوشل میڈیا کے اثرات ☆ایک دلچسپ کرکٹ میچ کا آنکھوں دیکھا حال

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CLASS: XI| SUBJECT: ISLAMIAT | PREPARATION PAPER 2023 - 2024 |HOD: SIR MUHAMMAD AFIF KHAN

PREPARATION PAPER OF XI – ISLAMIAT

حصہ الف (کثیر الانتخابی سوالات)

اس حصہ میں سوالات کا انتخاب پورے نصاب سے کیا جائے گا۔

حصہ ب (مختصر سوالات کے جوابات)

☆ سورۃ الانفال یا سورۃ البقرہ (مکمل)

☆ احادیث (مکمل)

۱. قرآن مجید کے کوئی بھی ۵ صفاتی نام اور ان کا مفہوم لکھیں

۲. وحی کی اقسام بیان کریں۔

۳. عہدِ صدیقی میں قرآن مجید کو جمع کرنے کی ضرورت کیوں پیش آئی۔

۴. سورۃ البقرہ کا مختصر تعارف بیان کریں۔ منافقین مومنوں کا مذاق کیوں اڑاتے تھے؟

۵. سورۃ البقرۃ کی آیات ۱۸ تا ۲۰ تک منافقین کے لیے دی گئی مثالوں میں سے کوئی بھی ایک مثال بیان کیجئے۔

۶. اللہ تعالیٰ نے مچھر کی مثال سے متعلق کیا فرمایا؟ حضرت آدمؑ کی پیدائش پر فرشتوں نے کس بنیاد پر سوال کیا؟

۷. انفالِ غنیمت اور فے کا مفہوم بیان کریں؟

۸. سورۃ انفال میں مومنوں کی کون کون سے صفات بیان کی گئی ہے؟

۹. کفار سے مقابلے کی صورت میں سورۃ انفال کی آیت میں کیا ہدایات دی گئی ہیں۔

۱۰. مومنوں کے لیے کون سی چیزیں آزمائش ہیں؟

۱۱. مشرکین قرآن مجید کو "ان ھذا الا اساطیر الاولین" کیوں کہہ رہے تھے؟

۱۲. العدوۃ الدنیا اور العدوۃ القصوی سے کیا مراد ہے؟

۱۳. عورتوں کے لیے آپ ﷺ کے رحمت ہونے کی مثال بیان کریں۔

۱۴. حضور اکرم ﷺ بطور منتظم سربراہ کیا تبدیلیاں لائے؟

۱۵. صبر واستقامت کے فائدے بیان کریں۔

۱۶. حضور اکرم ﷺ کی معاف کرنے کی کوئی دو مثالیں بیان کیجئے۔

۱۷. عدل وانصاف نہ ہونے سے معاشرے پر کیا منفی اثرات پڑتے ہیں

۱۸. اسلامی اخوت کے لغوی معنی اور مفہوم بیان کیجیے۔

۱۹. غیر مسلمان کے حقوق بیان کیجئے۔

۲۰. اسلام سے پہلے عورتوں کی کیا حیثیت تھی؟

۲۱. اسلام اتحاد واتفاق کیوں سکھاتا ہے؟

۲۲. حضرت امام جعفر صادق کا آبائی اور ننھیالی سلسلہ نسب کیا ہے؟

۲۳. امام جعفر صادق سے کون کون سی بڑی شخصیات نے فیض حاصل کیا۔

۲۴. حضرت امام ابو حنیفہ کے اساتذہ کا ذکر کیجئے۔

۲۵. حضرت امام مالک کی کتاب کا نام کیا ہے اور اس کی کیا اہمیت ہے؟

۲۶. حضرت امام شافعی کی تصانیف بیان کریں۔

۲۷. حضرت امام احمد بن حنبل حصول علم کے لیے کون کون سے ذرائع سے علم حاصل کیا۔؟

۲۸. زکوۃ کے معاشی فوائد تحریر کریں۔

۲۹. جب غزوہ بدر میں مسلمانوں کی مدد کے لیے نازل ہونے والے فرشتوں کو شیطان نے دیکھا تو کیا رد عمل کیا؟

۳۰. سورۃ انفال کی آیات میں گزشتہ قوموں کی بربادی کے کیا اسباب بتاتے گئے ہیں؟

۳۱. موجودہ دور میں جہاد کے لیے کس ساز و سامان کی ضرورت ہے واضح کریں۔

۳۲. فدیہ سے کیا مراد ہے؟

۳۳. اللہ تعالیٰ نے سورۃ انفال میں قیدیوں کے متعلق کیا ارشاد فرمایا؟

۳۴. اصول اربعہ اور اس کے مصنفین کے نام تحریر کریں۔

۳۵. صحاح ستہ اور اس کے مصنفین کے نام تحریر کریں۔

۳۶. اعمال کا دار و مدار نیتوں پر ہے تشریح کیجئے۔

۳۷. صلح رحمی کا مطلب اور فوائد بتایئے۔

۳۸. توحید کی اقسام کی وضاحت کریں۔

۳۹. ختم نبوت کا مطلب تحریر کریں

۴۰. چار مشہور فرشتوں کے نام اور کام تحریر کریں

۴۱. عالم برزخ سے کیا مراد ہے

۴۲. چار مشہور آسمانی کتابوں کے نام اور کن انبیاء پر نازل ہوئی تحریر کریں۔

۴۳. عبادت کسے کہتے ہیں؟

۴۴. نماز کی فرضیت کا تحفہ کب اور کسے ملا؟

۴۵. صاحبِ نصاب سے کیا مراد ہے؟

۴۶. لیلۃ القدر کی کیا فضیلت ہے؟

۴۷. سعی کیا ہے؟

حصہ ج (تفصیلی سوالات کے جوابات)

۱. قرآن کے تعارف و فضائل پر نوٹ تحریر کریں۔

۲. عقیدہ توحید بیان کیجئے اور انسانی زندگی پر اس کے اثرات تحریر کریں۔

۳. عقیدہ رسالت بیان کریں نیز رسالت والے منصب کی خصوصیات بیان کرتے ہوئے رسالت محمدی ﷺ کی خصوصیات کیا ہے؟ بیان کریں۔

۴. عقیدہ ختمِ نبوت بیان کریں۔

۵. عقیدہ آخرت کی وضاحت کیجئے نیز عقیدہ آخرت کے انسانی زندگی پر کیا اثرات مرتب ہوتے ہیں تحریر کیجئے۔

۶. نماز کی فضیلت اور اہمیت بیان کرتے ہیں ہوئے نماز کے انفرادی اور اجتماعی فوائد تحریر کریں۔

۷. زکوۃ کی اہمیت بیان کیجئے نیز زکوۃ کے مصارف اور فوائد بیان کیجئے۔

۸. روزے کی فضیلت اور اہمیت بیان کریں نیز انسانی زندگی پر روزے کے اثرات بیان کریں۔

۹. حضرت امام جعفر صادق کی زندگی اور دینی خدمات کے بارے میں تفصیلی مضمون لکھیں۔

۱۰. حضرت امام ابو حنیفہ کی زندگی پر تفصیلی نوٹ لکھیں۔

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CLASS: XI | SUBJECT: MATHEMATICS | PREPARATION PAPER 2023 - 2024 | BY: SIR JAMSHAID AZIZ

PREPARATION PAPER OF XI – MATHEMATICS FOR 2024

IMPORTANT QUESTIONS

Chapter # 1	Ex # 1.1: Q # 4 (vi)(vii), Q # 5, Q # 6 (vii) (viii), Q # 9 Ex # 1.2: Q # 2, Q # 7 (i), Q # 8 (vi) (vii), Q # 9, Q # 10 Ex # 1.3: Q # 1, Q # 2 (ii) (v), Q # 3 (iii) (v) Review Ex # 1: Q # 4, Q # 7, Q # 5 (ii), Q # 8 (iii) (iv)
Chapter # 2	Ex # 2.1: Q # 7 (i), Q # 8, Q # 11, Q # 12, Q # 9 Ex # 2.2: Q # 4, Q # 5 Ex # 2.3: Q # 3 (iii) (iv), Q # 7 (iv) (v) Ex # 2.4: Q # 2 (iii), Q # 3 (ii) (iv) (v) (vi), Q # 4, Q # 5 Ex # 2.5: Q # 1 (i), Q # 2 (ii), Q # 3 (i) (ii) Ex # 2.6: Q # 3, Q # 4, Q # 5, Q # 6 Review Ch # 2: Q # 9, 10 & 11
Chapter # 3	Ex # 3.1: Q # 13, 14 & 15 Ex # 3.2: Q # 8, 14 Ex # 3.4: Q # 5, 7, 9, 10 & 11 Ex # 3.5: Q # 3, 4, 5, 6, 8, 9, 10 Ex # 3.6: Q # 1, 3, 4, 5 & 6 Review Ex: 3, 4, 5, 6 & 7
Chapter # 4	Ex # 4.2: Q # 5, 6, 10 Ex # 4.3: Q # 2, 3, 6 & 7 Ex # 4.4: Q # 3 (i), 5, 6, 7, 8 & 9 Ex # 4.5: Q # 3, 5 & 6, Example 4 (page # 142) Ex # 4.6: Q # 2 (ii), (iv), Q # 3, 4, 5, 6 & 7 Ex # 4.7: Q # 5, 6 & 7 Example 2 (page # 151) Ex # 4.8: Q # 3, 4 & 5 Ex # 4.9: Q # 3, 4, 5, 6, 7, 8, 9 Review Ex # 4: Q # 3, 8, 9 & 10
Chapter # 5	Ex # 5.1: Q # 3, 7, 8, 10, 11 & 12 Ex # 5.2: Q # 1, 3, 6 & 9 Ex # 5.3: Q # 1, 6, 4 & 5 Ex # 5.4: Q # 1, 3, 7, 6 & 8
Chapter # 6	Ex # 6.1: Q # 3 Ex # 6.2: Q # 2, 4, 6, 10, 11, 14, 12, 16, 18 & 19 Ex # 6.3: Q # 3, 5, 6, 7, 8, 9 & 11 Ex # 6.4: Q # 3, 4, 7, 8, 9, 10, 11, 13, 15, 16, 17 & 18 Review Ex # 6: Q # 4, 6 & 7

Course Coordinator: Sir Asif Iqbar
Contact No: 0321-2108729

Chapter # 7	Ex # 7.1: Q # 1 (ii), (iii), (iv), (vii), (viii), (x), (xi), (xii), (xiii) & (xiv), Q # 2 Ex # 7.2: Q # 5, 6, 7 & 8 Ex # 7.3: Q # 2, Q # 5 (i), (iii) & (v), Q # 6, 7, 8 & 9 Review E x # 7: Q # 3, 5
Chapter # 8	Ex # 8.1: Q # 7, 9, 10, 11 & 13 Ex # 8.2: Q # 3 & 4 Ex # 8.3: Q # 5, 6, 7 & 8 Ex # 8.4: Q # 3, 4 & 5
Chapter # 9	Ex # 9.1: Q # 4 Ex # 9.2: Q # 1 (i), (iii), Q # 2 (i), (ii) Ex # 9.3: Q # 1 (i), (iii), (vi), Q # 2, 3 & 4
Chapter # 10	Ex # 10.1: Q # 5, 6, 7, 8, Q # 3 (ii) Ex # 10.2: Q # 2, Q # 7, Q # 6 Ex # 10.3: Q # 1, 2, 3, 8, 9, 12, 13, 14, 15 & 16 Ex # 10.4: Q # 3, Q # 4 (i) Review Ex # 10: Q # 2 (i) (iii) (iv) (v) (vi)
Chapter # 11	Ex # 11.1: Q # 5, 7, 8 Ex # 11.2: Q # 1, 2, 10, 11, 12, 13, 14, 15 Ex # 11.3: Q # 1 (i) (v), Q # 2, 3, 4 Ex # 11.4: Q # 3, 4, 5, 6 Review Ch # 11: Q # 2, 6, 7, 8, 9, 10, 12, 13
Chapter # 12	Ex # 12.1: Q # 2 (iii) (iv), Q # 3 (vii) (viii) (xi) (xii), Q # 4 (i) (iii) (iv) (v) Ex # 12.2: Q # 1, 2, 3 Ex # 12.3: Q # 11, 13, 14, Example 2 & 3 Ex # 12.4: Q # 3, Q # 4 (i) (iii) (v) (vii) (viii), Q # 5 Ex # 12.5: Q # 7, 8, 9, 10, 14, 15, 16, 17, 18 Review Ch # 12: Q # 4, 5

Course Coordinator: Sir Asif Iqbar
Contact No: 0321-2108729

ANEES HUSSAIN

EXCELLENCE IN EDUCATION SINCE 1989

CLASS: XI| SUBJECT: BIOLOGY | PREPARATION PAPER 2023 - 2024 |SIR SAROSH JAWED

WORKSHEET FOR SESSION 2023 – 2024

SECTION "A"

(Objectives)

XI – BOTANY

Note: See all the Mcq's discussed in class lectures and test papers.

SECTION "B" & "C"

(Subjective Questions)

CHAPTER 3: THE CELL

LONG QUESTIONS:

Q) Describe the structure and functions of following organelles of cell with suitable diagrams:

- Plastids
- Nucleus
- Mitochondria
- Ribosome

Q) Write short notes on:

- Structure of plasma membrane
- Lysosome
- Ribosome

Q) Who proposed the fluid mosaic model? Explain the experiment and draw diagrams?

SHORT QUESTIONS:

Q) What is cell fractionation? explain

Q) Write a note on the following:

- Differential staining
- Chromatography
- Electrophoresis
- Spectrophotometry

Q) What role does endoplasmic reticulum plays in the cell?

Q) Write the function of golgi apparatus?

Q) Write a note on suicide sacs? Also describe its types?

Q) Why is mitochondria called the power house of the cell? Explain briefly?

Q) Write a role of glycoproteins and Glycolipids as cell surface markers.

Q) What is cytoskeleton?

Q) Define the term cyclosis.

Q) Write a note on vacuoles.

Q) Define plastids with its types and existence in different parts of plants?

Q) How centriole is important in cell division?

Q) What are chromosomes? Explain its types.

Q) Describe the structure of nucleus?

Q) Distinguish between:

- Prokaryotic and eukaryotic cell
- Cell wall and cell membrane
- Glyoxysomes and peroxisomes

CHAPTER 4: BIOENERGETICS

LONG QUESTIONS:

Q) Define photosynthesis. Describe the light reaction of photosynthesis.

Q) Describe in detail the process of Glycolysis or Kreb's cycle.

Q) Define photosynthesis. Describe the fixation of CO_2 during photosynthesis (dark reaction) OR

Q) What do you mean by energy flow in an Ecosystem? What is the role of this flow in the living world?

Q) Explain in detail the light dependant reaction?

Q) Describe the Calvin cycle with diagram?

Q) Explain Aerobic and Anaerobic respiration with equations?

SHORT QUESTIONS:

Q) Write the photosynthetic reactants and products in an equation and explain the reaction?

Q) Define the following:

- Photophosphorylation
- Oxidative phosphorylation
- Substrate level phosphorylation

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Q) What are chloroplasts? How are they important in chemiosmosis?
Q) Describe all the photosynthetic pigments?
Q) Explain the role of light in photosynthesis.
Q) Explain photorespiration.
Q) Mention the importance of light in the process of photosynthesis?

CHAPTER 5: VARIETY OF LIFE

LONG QUESTIONS:

Q) Describe the characteristics, structure and classification of virus?
Q) Describe the life cycle of a bacteriophage virus and also explain lytic and lysogenic cycle?

SHORT QUESTIONS:

Q) Draw the lytic cycle of bacteriophage?
Q) Draw a diagram of bacteriophage virus.
Q) Briefly describe the life cycle of bacteriophage?
Q) Define tobacco mosaic virus.
Q) What are prions and viroids?
Q) What is binomial nomenclature? Explain with example?

CHAPTER 6: PROKARYOTES

LONG QUESTIONS:

Q) Briefly explain the process of reproduction in bacteria.
Q) Describe chemical and physical and chemical methods to control bacteria.

SHORT QUESTIONS:

Q) What are the salient features of Cyanobacteria?
Q) Describe the different types of nutrition in bacteria?
Q) Differentiate b/w aerobic and anaerobic respiration?
Q) What do you mean by human flora.
Q) Draw a labeled diagram of Bacterium?
Q) Classify bacteria on the basis of forms (shapes)?
Q) How endospore formation occur in bacteria?
Q) Describe the process of growth in bacteria.
Q) Write a note on the economic importance of Bacteria?
Q) what are physical factors to control bacteria?
Q) Write a note on reproduction in bacteria?
Q) Who proposed the germ theory and what was it about?
Q) What chemical methods are used to control harmful bactetia?
Q) Write the ecological importance of bacteria?
Q) Explain different bacterial diseases in man.
Q) How are cyanobacteria economically important?

CHAPTER 7: PROTOCTISTIS AND FUNGI

LONG QUESTIONS:

Q) Describe the structure and reproduction in ulva? Also explain alternation of generations?
Q) What are plant like protoctists? Explain with examples and diagrams where necessary?
Q) Briefly enlist the general characteristics of fungi.

SHORT QUESTIONS:

Q) Describe the reproduction in Ulva?
Q) Draw only the diagrammatic life cycle of Ulva (no description)?
Q) Draw a neat and labeled diagram of ulva?
Q) Draw a labeled diagram of Euglena?
Q) Write a short note on slime molds?
Q) Write a note on Oomycotes?
Q) What are phytophthorainfestants?
Q) Draw a life cycle of late blight of potato.
Q) Draw a life cycle of Mucor.
Q) Describe the body of fungus?
Q) Write the classification of fungi according to nutrition?

Q) Write a short note on mycorrhizae and lichens?
Q) Write a note on importance of fungi? (Ecological, economical and commercial)

CHAPTER 8: DIVERSITY AMONG PLANTS

LONG QUESTIONS:

Q) Describe the process of fertilization in an angiospermic plant?
Q) What changes occur in the ovule after fertilization?
Q) Describe the life cycle of fern. Illustrate your answer with reference to alternation of generations?
Q) Define Alternation of Generation. Describe briefly the life cycle of an Angiosperm or selaginella?

SHORT QUESTIONS:

Q) Explain the life cycle of bryophyte.
Q) Explain the subdivisions of class tracheophyta with examples?
Q) How plants adapted land habitat?
Q) Write a short note on evolution of leaf?
Q) Vascular plants are successful land plant. Explain
Q) Describe the evolution of seed?
Q) Write a short note on andiantum(maiden hair fern)? Also draw diagram?
Q) write down general characteristics of gymnosperm.
Q) Explain the phenomenon of double fertilization?
Q) Differentiate between

- Bryophytes and tracheophytes
- Angiosperm and gymnosperm
- Monocotyledon and dicotyledon
- Lycopsida and sphenopsida

Q) Define the terms Heterospory, Heterogamy?
Q) Draw an outline of the cassification of kingdom Plantae?
Q) Why do we say that sporophyte of anthocerotae shows many advanced characters suitable for land environment?
Q) Describe the structure of T.S. of Marchantia Thallus.
Q) Draw the labeled diagram of gametophyte of fern.
Q) Define inflorescence. Explain racemose and cymose inflorescence with its types.

CHAPTER 10: FORMS AND FUNCTION IN PLANTS

LONG QUESTIONS:

Q) Describe the role of important mineral nutrients and their deficiency symptoms in plants.
Q) How does the pressure flow hypothesis explain in the movement of sugar throughout the plant? Illustrate your answer with the help of a diagram?
Q) Define Ascent of sap? Describe its mechanism?
Q) Describe in detail the adaptations made by the plants in order to survive during drought condition.
Q) What are phytohormones? Name them and explain the role of each of them in detail.
Q) Briefly explain paratonic movement in plants.

SHORT QUESTIONS:

Q) Write down the role of some micronutrients.
Q) What are methods of nutrition in plants?
Q) Describe how nutrition takes place in insectivorous plants.
Q) What are autrotrophs?
Q) What is photorespiration? Also write its consequences?
Q) Briefly describe how gaseous exchange in plants takes place?
Q) Explain the pathways available for water to enter the xylem.
Q) Write a short note on the following:

- Source and sink movement
- plasmolysis and deplasmolysis
- hydrophytes
- Mesophytes
- Halophytes

Q) Differentiate b/w osmosis and diffusion.
Q) How plants survive during high and low temperature?
Q) What is annual ring? Explain.
Q) Describe various processes involved in the uptake of water and minerals in plants. Write a note on vessels and tracheids.
Q) Define vascular tissues and only name the elements of Xylem and Phloem.

Q) Explain the pressure flow theory?
Q) Describe the three types of transpiration depending upon the route of escape of water vapours from aerial parts of plants?
Q) Briefly define root pressure theory?
Q) Write down the note on photoperiodism.
Q) Run down the role of phytochrome in photoperiodism.
Q) Write down the note on the following>

- Parenchyma
- Collenchyma
- Sclerenchyma

WORKSHEET FOR SESSION 2023 – 2024

SECTION "A"

(Objectives)

XI – ZOOLOGY

Note: See all the Mcq's discussed in class lectures and test papers.

SECTION "B" & "C"

(Subjective Questions)

CHAPTER 1: BIOLOGICAL MOLECULES

LONG QUESTIONS:
Q) Write a detailed note on structure of protein? Also draw diagram?
Q) What are carbohydrates? Explain its structural classifications with example?
Q) Define nucleic acids with its two main types? Also describe the types of RNA?
SHORT QUESTIONS:
Q) Write a note on structure of gene.
Q) How is carbon atom important for conservation of oxygen in human body?
Q) Explain terpenoids and its types.
Q) Write a short note on importance of water?
Q) Explain what is gene?
Q) What are lipids? Give types with equations?
Q) What are the two types of protein according to their function?
Q) Define conjugated molecules? Also name some?

CHAPTER 2: ENZYMES

LONG QUESTIONS:
Q) What are enzymes? Give the types of enzymes and their mode of action. Also explain the factors that affect their activity.
Q) Who proposed the key lock theory? Explain the theory and also draw a diagram?
SHORT QUESTIONS:
Q) What is an enzyme substrate complex?
Q) In what ways are enzymes specific?
Q) Write a short note on inhibitors with all its types?
Q) Differentiate between:

- Holoenzyme and apoenzyme
- Enzyme activator and enzyme inhibitor
- Exoenzyme and endoenzyme

Q) State the factors affecting enzyme activity?

CHAPTER 5: ACELLULAR LIFE

LONG QUESTIONS:
Q) Define HIV and explain life cycle of HIV virus with the help of its labelled diagram?
Q) Briefly classify virus according to their genome.
SHORT QUESTIONS:
Q) How virus survive inside of host cell?
Q) Explain animal virus and their sign and symptoms.
Q) Explain virus survival in environment.
Q) Write a short note on AIDs?

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Contact No: 0321-2108729

CHAPTER 6: PROKARYOTES

SHORT QUESTIONS:

Q) Explain bacterial disease in man with their sign and symptoms.
Q) Write the note on use and misuse of antibiotics?

CHAPTER 7: PROTOCTISTS AND FUNGI

LONG QUESTIONS:

Q) What are animal like protoctists? Explain with types.

CHAPTER 10: DIVERSITY AMONG ANIMALS

LONG QUESTIONS:

Q) Write the general characteristics of following phylums?

- Phylum Parazoa
- Phylum Ceolentrata
- Phylum Platyhelminthes
- Phylum Aschelminthes
- Phylum Annelida
- Phylum Mollusca
- Phylum Echinodermata
- Phylum Hemichordate

Q) Describe all the classes of phylum chordata in detail with general characteristics?

SHORT QUESTIONS:

Q) Draw a chart to show the Phylum and classifications of kingdom Animalia?
Q) What is symmetry? Explain with its two types?
Q) Differentiate between protostomes and duetrostomes?
Q) Distinguish between Diploblastic and Triplobalstic organization?
Q) What is body cavity and why it's necessary? Also give all three types of body cavities found in animals.
Q) Differentiate between A-sexual and Sexual reproduction?
Q) Write the importance of poriferans?
Q) What is polymorphism? In which phylum polymorphism is noticed and why?
Q) Where coral reefs are found? Mention the phylum and also give economic importance?
Q) Define infestation and disinfestations?
Q) Mention some harmful and beneficial insects? Also tell why are they harmful or beneficial?
Q) Write a note on economical importance on molluscs?
Q) Dot down the adaptations of fishes in an aquatic life?
Q) How reptiles became first land dwelling organisms? Mention some adaptations?
Q) Describe the following subclasses of mammals:

- Prototheria
- Metatheria
- Eutheria

CHAPTER 11: HOLOZOIC NUTRITION

LONG QUESTIONS:

Q) Describe the human digestive system in detail? Also draw diagram?
Q) Run down the role of accessory gland associated to our gut system.

SHORT QUESTIONS:

Q) Write the classification of animals on the basis of nutrition?
Q) Define filter feeders, fluid feeders and macrophagous feeders?
Q) Write a short note on parasitic nutrition in animals?
Q) Explain all the characteristic processes involved in holozoic nutrition?
Q) Write the process of digestion in amoeba?
Q) Differentiate between tube like and sac like digestive system.
Q) Explain the role of gastrovascular cavity of planaria taking part in digestion?
Q) What is peristalsis and anti-peristalsis?
Q) Explain some disease related to liver.
Q) Explain small intestine with digestive activity in its three parts?
Q) How is dyspepsia caused? Also give treatment?
Q) Differentiate between anorexia and bulimia.
Q) What is botulism and how it is caused?
Q) What is the disease caused by the accumulation of fat droplets? How it is treated?
Q) What are the two diseases related to women with respect to nutrition? Define them?
Q) Describe peptic ulcer?

CHAPTER 12: CIRCULATION

LONG QUESTIONS:

Q) Describe the structure and function of the human heart with labeled diagram? Also explain the cardiac cycle.
Q) Briefly explain lymphatic system of man.

SHORT QUESTIONS:

Q) Write a note on Lub and Dub?
Q) What is lymph? Define lymphatic system and its functions?
Q) Write a short note on S.A and A.V node.
Q) Describe the following blood diseases briefly?

- Thrombus
- Arthrosclerosis
- Congenital heart problem
- Heart failure
- Angina pectoris

Q) Describe the treatment options for cardiovascular disorder.
Q) Differentiate between open-type and closed-type circulatory systems?
Q) Draw a labeled diagram of L.S of human heart?
Q) Differentiate b/w arteries and veins?
Q) Write a note on Hypertension?
Q) Write a note on Atherosclerosis?
Q) Briefly explain vascular pathway.
Q) Write a note on single circuit circulation plan and double circuit circulation plan?
Q) Write a short note on blood pressure?

CHAPTER 13: IMMUNITY

LONG QUESTIONS:

Q) Define immunity. Give a detailed account of Innate and Adaptive immune system?
Q) Write a detailed note on the Immune system?
Q) Explain cell mediated and antibody mediated immune response.

SHORT QUESTIONS:

Q) Give an account on adaptive immune system?
Q) Explain the role of digestive tract in immune system.
Q) Write a note on transplant rejections.
Q) Write a note on Pyrexia.
Q) Define phagocytosis and name the cell involve in phagocytosis mediated immune response.
Q) Write a detailed note on cytotoxicity.
Q) Define vaccine. Name types of vaccines.
Q) Run down the role of air passage way in first line of defence.
Q) Describe the following blood diseases briefly?

- Allergies
- Autoimmune disorder

CHAPTER 14: GASEOUS EXCHANGE

LONG QUESTIONS:

Q) Describe the process of gaseous exchange in humans? Also draw diagram of human respiratory system?

SHORT QUESTIONS:

Q) State few properties of respiratory surfaces in animals?
Q) What are the components of respiratory system in man?
Q) Explain the major functions of respiratory system.
Q) Describe three pathways to transport carbon dioxide in blood stream.
Q) Explain the process through which carbon dioxide and oxygen is being transported in man.
Q) Explain voluntary and involuntary respiration in man?
Q) Write a note on sinuses
Q) Write a short note on following respiratory disorders:

- Otitis media
- Lung Cancer
- Pneumonia
- Tuberculosis
- Emphysema

Q) Write the role of respiratory pigments?
Q) Describe lung capacities and different lung volumes?
Q) Differentiate between inspiration and expiration?

CLASS: XI | SUBJECT: PHYSICS | PREPARATION PAPER 2023 - 2024 | BY: SIR NAVEED SHAH

PREPARATION PAPER OF XI – PHYSICS FOR 2024

SECTION 'A'
(MULTIPLE CHOICE QUESTION)

Note: It Consist of seventeen MCQs. Each question carries equal marks.

SECTION 'B' & 'C'
(SHORT & LONG – ANSWER QUESTIONS)

CHAPTER # 01(MEASUREMENTS)

Exercise: Q1, 2, 4, 8 & 9
Solved Example: 1.1, 1.2, 1.3 & 1.4(uncertainty calculation of derived quantities)

DEFINITION/SHORT QUESTIONS:

*Physical quantity * Base quantity * Fundamental Unit * Derived Unit *Radian * Steradian
Define Error. How many types of error are there? Define each of them
To find out the dimensions of the physical quantities
Prove that the following equations are dimensionally correct?

(i) $T = 2\pi\sqrt{l/g}$ **(ii)** $T = 2\pi\sqrt{m/k}$ **(iii)** $2as = vf^2 - vi^2$ **(iv)** $S = vit + \frac{1}{2} at^2$

(v) $V = f\lambda$ **(vi)** $E = mc^2$ **(vii)** $\frac{1}{f} = \frac{1}{p} + \frac{1}{q}$ **(viii)** $v = \sqrt{\frac{T}{\mu}}$

(ix) $f = 1/2l\sqrt{\frac{TL}{M}}$ **(x)** $f = 1/2\pi\sqrt{\frac{g}{r}}$

CHAPTER # 02(KINEMATICS)

Exercise: Q1, 2, 3, 4, 5 & 6
Solved Example: 2.1, 2.3, 2.4 & 2.5

DEFINITION/SHORT QUESTIONS:

* Free Vector * Unit Vector * Negative Vector * Resolution Vector * Scalar product * Vector Product * Projectile motion *Total time of flight
*Derive three equations of accelerating motion
*what is the significance of area under the velocity-time graph in the context of accelerated motion

THEORETICAL QUESTION

- Explain the method for the addition of vectors by Rectangular Component method
- What is projectile motion? A shell is fired with a velocity Vo at an angle θ with the horizontal to target at the ground level. Derive the expressions for:
  i) Total time of flight ii) Horizontal range iii) Height of projectile iv)Time to reached maximum height

REASON

- Can the magnitude of resultant of two vectors of the same magnitude be equal to the magnitude of either of the same vectors? Explain mathematically
- A vector of magnitude F and other is 2F the magnitude of resultant vector is equal to the greater vector. Is it possible? explain mathematically
- In the game of cricket, why is it easy to catch a ball of high trajectory?

CHAPTER # 03(DYNAMICS)

Exercise: Q1, 2, 3, 4, 6 & 7
Solved Example: 3.1 & 3.2

DEFINITION/SHORT QUESTIONS:

* Force	* Dynamics	* Elastic collision
* Unbalance force	* Negative acceleration	* Linear Momentum
* Impulse	* Statics Friction	* Coefficient of friction

* Prove that force can be defined as a rate of change in momentum
* State and Explain Law of conservation of linear momentum
* Prove that angle of repose is equal to angle of friction
* Prove that tangent of angle of friction is equal to coefficient of friction

THEORETICAL QUESTION

- Define Elastic and Inelastic collision. Determine the equation for the final velocities of two bodies colliding elasticity

REASON:

Explain how the concept of impulse is related to the change in momentum of an object provides an example of everyday life for its significance.
How does friction influence the motion of an object?

CHAPTER # 04(ROTATINAL & CIRCULAR MOTION)

Exercise: Q1, 2, 4, 5, 6, 7, 8, 10 & 11
Solved Example: Example: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6 & 4.7

DEFINITION/SHORT QUESTIONS:

*Angular displacement *Angular velocity *Angular Acceleration *Radian *Centripetal Acceleration *Centripetal Force * Moment of Inertia * Angular Momentum * Torque
* What is meant by banking of curve derive the expression of the angle dependent of bank curve and the maximum speed of moving body on the bank curve
*Derive the relation b/w **(a)** linear and angular velocity $V = r\omega$
(b) linear and angular acceleration $a = r\alpha$
* Define Orbital velocity and derive an expression for orbital speed satellite orbiting round the earth t some the altitude (OR) Orbital period of a satellite orbiting around Earth(keppler's third law of planetary motion)

THEORETICAL QUESTION:

- Define centripetal acceleration. Drive the formula $a_c = rw^2$
- State and proof Law of conservation of Angular momentum

CHAPTER # 05(WORK POWER& ENERGY)

Exercise: Q1, 2, 4, 5, 6, 7, 9, 10 & 11
Solved Example: 5.2, 5.3 & 5.4

DEFINITION/SHORT QUESTIONS:

*Work done *Power *Energy * Conservative field *Kinetic Energy *Potential Energy *Absolute Potential Energy *Gravitational Potential Energy * Escape Velocity
* Explain the term "power" and give its dimensions and its units. Prove that power is scalar product of force and velocity
* What is work energy theorem how it is expressed mathematically
*Define work done by variable force. Calculate the work done from force-displacement graph

THEORETICAL QUESTION:

- Define Gravitational field and conservative field and Show that Gravitational field is conservative field and it is independent of the path followed by the body?
- State and proof Law of conservation of Energy.

CHAPTER # 06(FLUID STATICS)

Exercise: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.
Solved Example: 6.1, 6.2, 6.3, and 6.6

DEFINITION/SHORT QUESTIONS:

*Fluid *Fluid statics *Up thrust * surface tension *Buoyancy
* State and explain Archimedes Principle and find gold purity by using density(work example#6.2)
* What is meant by buoyancy discuss it in liquid and gases
* Describe law of flotation in liquid and gases
*Distinguish between flotation and up thrust

THEORETICAL QUESTION:

- State Pascal's Law. Describe the applications of Pascal law in Hydraulic brake and Hydraulic lift.
- Define Surface tension and also discuss it with at least three experiments/examples

REASON:

- Why must a liquid and not a gas be used as the fluid in a hydraulic machine?
- Why don't ships made of Iron sink?
- Why do you float higher in salt water than in fresh water?

CHAPTER # 07(FLUID DYNAMICS)

Exercise: 1, 2, 3, 4, 5, 7, 8, 9 & 10
Solved Example: 7.1, 7.2 & 7.4

DEFINITION/SHORT QUESTIONS:

*What is the difference between stream line and turbulent flow?
*State Bernoulli's principle
*Discuss significance of Stokes law or Reynolds
*Describe terminal velocity in liquids

THEORETICAL QUESTIONS: .

- Derive equation of continuity. Also show it physical significance
- Derive Bernoulli's equation with its two applications
- Discuss viscous force in fluids. Define fluid dynamics explain its significance in the study flow of fluids
- Discuss the concept of Reynolds number and its significance in fluid dynamics. Explain how Reynolds number relates to the transition between laminar and turbulent flow

REASON:

Fluid flow is turbulent rather than laminar support this statement?
Why do airplanes take off into wind?

CHAPTER # 08(ELECTRIC FIELD)

Exercise: 1, 2, 3, 4, 5, 6, 7, 8, 9 & 10
Solved Example: 8.1, 8.2, 8.4, 8.5, 8.7 & 8.8

DEFINITION/SHORT QUESTIONS:

*Electrostatics Force *Charge *Permittivity of medium * Electric field * Electric field Intensity * Electric Dipole * Electric flux * Potential difference *Electron volt
*Define electric flux and also derive its mathematical condition for maximum and minimum flux
*Derive the formula for the electric flux of close sphere?

THEORETICAL QUESTION: .

- State and Explain Coulomb's Law? Derive the formula for the coulomb force in the presence of dielectric medium
- Define Electric field Intensity. Derive an expression for E.F.I due to point charge.
- What is meant by Electric potential and derive an expression for electric potential due to an isolated point charge.
- Define an Electric dipole. Derive the formula for the electric field due to an electric dipole at a point "P" placed on its axial line

REASON:

Why do most objects tend to contain nearly equal numbers of positive and negative charges?
How the electric flux through a closed surface is independent of the shape or size of the surface enclosed charge

CHAPTER # 09(CAPACITORS)

Exercise: 1, 2, 4, 5, 6 & 7
Solved Example: 9.1

DEFINITION/SHORT QUESTIONS:

*Define capacitance of capacitors derive the factors on which the capacitance of parallel plate capacitors depends
*derive an expression for the net capacitance of two capacitors combined in (a) series combination (b) parallel combination
*Derive an expression for the energy stored in capacitor C when there is a potential difference V

THEORETICAL QUESTION: .

- Explain the phenomena of charging and discharging of capacitor

CHAPTER # 10(D.C CIRCUITS)

Exercise: 1, 2, 3, 4, 5, & 6
Solved Example: 10.1,10.2,10.3 & 10.4

DEFINITION/SHORT QUESTIONS:

*thermoelectricity*resistivity*rheostat
*What are thermistors? Write their importance
*State Kirchhoff's law
*State Ohm's law
*Both e.m.f and voltage is measured in volts what is the difference between these two concepts

THEORETICAL QUESTIONS: .

- State working and principle of Wheatstone bridge explain how it is used to find unknown resistance
- Explain the working of fire alarm system using thermistor
- Explain the dependence of resistivity on temperature
- How can we use a rheostat as a potential divider

REASON:

Why the terminal voltage of cell is less than of its e.m.f
If copper and aluminum wire of the same length have same resistance which has the larger diameter and why

CHAPTER # 11(OSCILLATIONS)

Exercise: 1, 2, 3, 4, 6, 7 & 8
Solved Example: 11.1 & 11.2

DEFINITION/SHORT QUESTIONS:

*Time period *Frequency *Displacement *Amplitude *vibratory motion *simple harmonic motion
*Discuss the concept of resonance frequency and its relationship to the natural frequency of an oscillating system
*Prove that the motion of mass spring system executes simple harmonic motion

THEORETICAL QUESTIONS: .

- A particle is in a state of uniform circular motion. Prove that its projection along one of its diameter executes simple harmonic motion
- Prove that the simple pendulum executes simple harmonic motion and also derive the formula for its time period
- Show that total energy of a body attached to elastic spring and executing SHM remains the same everywhere?

REASON:

The period of pendulum does not depend on mass of the bob by contrast the period of mass spring system does depend on mass explain the apparent condition
A wire is hanging from the top of tower such that the top is not visible due to darkness how do you calculate the height of tower?

CHAPTER # 12(ACOUSTICS)

Exercise: 1, 4, 5, 7, 8 & 10
Solved Example: 12.1, 12.2 & 12.3

DEFINITION/SHORT QUESTIONS:

*Sound *Frequency of sound *Transverse waves *longitudinal waves *Beats
*Factors effecting upon the speed of sound
*Define standing waves and explain how it forms in a stretched string
*Elaborate the concept of nodes and antinodes in standing wave .Explain their locations and the relationship between node spacing and wave length

THEORETICAL QUESTIONS: .

- What are stationary waves? Discus the vibrations in a stretched string when it vibrates in (i) One loop (ii) two loops (iii) three loops and also define the formula for the frequency of $\mathbf{n^{th}}$ loops.
- Discuss the newton formula for the speed of sound wave and in what way did the Laplace correct this formula?
- Define Doppler's effect. Obtain expressions for the apparent frequency of all relevant cases between source and listener.
- Obtain the relevant expression for the beat frequency of sound

REASON:

Why the speed of sound in solids is much faster than the speed of sound in air
Why that is your own voice sound is strange to you when you hear it played back on a tape recorder but your friend all agree that it is just what your sounds like?

Course Coordinator: Sir Asif Iqbal
Contact No: 0321-2108729

CHAPTER # 13(PHYSICAL OPTICS)

Exercise: 1,2 4, 5, 12 13 14 15 17 & 18
Solved Example: 13.1, 13.2 & 13.3

DEFINITION/SHORT QUESTIONS:

*Interference of light*Constructive and destructive interference
* Describe Bragg's Law for X-ray diffraction and derive its mathematical condition
* What is the difference between interference and diffraction? What do diffraction and interference have in common?
* what is meant by the diffraction of light and derive its mathematical condition for wave length.

THEORETICAL QUESTIONS: .

- Describe young's double slits experiment to produce interference pattern for light waves. Explain how can fringe spacing determined?
- Give an experimental arrangement to produce Newton's ring. Derive an expression for the radius of N^{th} bright Dark ring
- Explain construction and working of Michelson's Interferometer.

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REASON:

It is possible to increase the orders of maxima for a given energy spectrum from a diffraction grating
Describe what happens to a single slit experiment if the width of slit slowly decreased?
Why does a crystal acts as a three dimensional grating for X-rays but not for visible light

CHAPTER # 14(COMMUNICATION)

THEORETICAL QUESTIONS: .

- How many types of modulation are there ?explain each of type of modulation in detail
- What is optical fiber? How information carried out through optical fiber give advantages of it
- What are the main components of satellite? How communication takes place in a satellite Explain three orbits of satellite

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REASON:

A male voice after modulation-transmission sounds like that of female to the receiver give reason
Why is an AM signal likely to be noisier than FM signal upon transmission through a channel?

PREPARATION PAPER OF XI – CHEMISTRY FOR 2024

	CHAPTER#1 Stoichiometry	
(i)	Define (i) Limiting Reactant (ii) Avogadro's number (iii) Molar volume (iv) Rounding off (v) Exponential notation (vi) Theoretical yield (vii) Actual yield (viii) Percentage yield	Short
(ii)	Why the practical yield is oftenless than theoretical yield?	Short
	NUMERICALS Do practice from book exercise and solved example **Topics** (i) Limiting reactant and its numerical. (ii) Numerical; Mass – Mass and Mass-Volume stoichiometric relationship.	Short
	CHAPTER#2 Atomic Structure	
(i)	Differentiate between Continuous and Linespectrum.	Short
(ii)	Give three properties of each α , β and y rays.	Short
(iii)	Write down the electronic configuration ofthe following ▪ Fe (Z=26), Cr (Z=24), Br^- (Z=35) ▪ Cu (Z=29), Ca^{2+} (Z=20)	Short
(iv)	Give the statements of the following • Pauli's exclusion principle • Aufbau Principle • Wiswesser Rule (n+ l) • Hunds Rule	Short
(v)	Discuss the defects of Bohr's Atomic Theory & derive the expression for the energy of Hydrogen atom. $(r = \frac{\varepsilon_0 n^2 h^2}{z\pi m e^2})$	Long
(vi)	Drive an expression for the frequency and wave number of radiation emitted from an electron. Given that $e = \frac{-mZ^2e^4}{8\varepsilon_0^2 n^2 h^2}$	
(vii)	What are X-rays? How are they produced? Give their properties and uses.	Long
(viii)	Give reasons: (i) Size of cation is always smaller than its natural atom. (ii) Na^+, Mg^{+2} and Al^{+3} are iso electronic ions. (iii) The I.P. of Li and K are 5.4 and 4.3 ev. What do you predict for the I. P of Na.	Short

Course Coordinator: Sir Asif Izhar
Contact No: 0321-2108729

CHAPTER#3 Theories of Covalent Bonding		
(i)	Differentiate between the following: • VBT and MOT • Sigma and pi bond • Bonding M.O and Anti bonding M.O	Short
(ii)	Draw a molecular orbital diagram of O_2 molecule and N_2 molecule. • Write down MO electronicconfiguration. • Determine bond order. • Explain paramagnetic behavior	Short
(iii)	Give scientific reasons: 1. Sigma bond is stronger than pi bond. 2. HF has greater ionic character than HCl. 3. Bond energy of molecules possessing multiple bonds is high. 4. Oil is insoluble in water but soluble in hexane explain why?	Short
(iv)	Predict the shape of following moleculeson the basis of VSEPR theory and HOM. $AlCl_3$, CCl_4, PH_3, H_2S. H_2O, NH_3, C_2H_4	Long
(v)	What do you mean by Hybridization? Explain sp^3 hybridization in CH_4 molecule and SP hybridization in C_2H_2 molecule	Long
CHAPTER#4 States of Matter I: Gases		
(i)	What is an Ideal gas? What are the causes of deviation of real gas from ideal behavior? Explain these deviations at lowtemperature and high pressure. Derive Vander Waal's equation	Long
(ii)	State and explain Dalton's law of partial pressure. Give practical applications of Dalton'slaw	Long
(iii) (iv)	State main postulates of kinetic molecular theory of gas. Derive general gas equation. Also deduce the value of R in atm dm^3/mol.K and J/mol.K.	Short
NUMERICALS Do practice from book exercise and solved example **Topics** Boyle law, ideal gas equation , Daltons law and grahams law		Short
CHAPTER#5 States of Matter II: Liquids		
(i)	Define the following: (a) Molar heat of fusion (b) Molar heat of vaporization (c) Molar heat of Sublimation	Short
(ii)	Write a short note on: (i) Viscosity (ii) Surface Tension	Short
(iii)	What is meant by liquid crystals? How is it differing from liquids and crystalline solid	Short

(iv)	What is hydrogen bond? How is it established? Give its industrial and biochemical applications.	Short
Give reasons for the following: (i) (ii) (iii) (iv) (v) (vi) (vii) (viii)	Water spilled on floor evaporate more faster than the same amount of water in a container. A falling drop of a liquid is spherical. Evaporation is a cooling process. Boiling point of liquid remains constant although heat is continuously supplied to the liquid. Mercury has its meniscus upward. Liquids cannot be compressed as gases do. Density of water is highest at 4 ° C. Honey is more viscous than water.	Short
CHAPTER#6 States of Matter III: Solid		
(i)	Difference: • Polymorphism and Isomorphism • Crystalline and amorphous solids	Short
(ii)	Define unit cell. Draw a diagram to show its axial distances and axial angles.	Short
(iii)	Give four properties of ionic solids. How can you determine the number of Na^+ and Cl^- ionsin a unit cell of sodium chloride?	Short
(iv)	Discuss all four types of crystalline solids with physical properties.	Short
CHAPTER#7 Chemical Equilibrium		
(i)	State and explain the Law of Mass Action.Derive the equilibrium constant for general reversible reaction $mA + nB \Leftrightarrow xC + yD$	Long
(ii)	State Le-Chatelier's principle. And explain Industrial application by Haber's Process and Ostwald's Process.	Short/ Long
(iii) (iv) (v)	Give brief account on Common ion effect. Define equilibrium constant (Kc). How it helps in predicting the (i) Direction of reaction (ii) Extent of reaction. Write relation between Kc and Kp.	Short
NUMERICALS Do practice from book exercise and solved example **Topics** Kc and Kp relation, Kc value determination, Eq.conc. determination, Ksp		Short
CHAPTER#8 Acid, Bases and Salt		
(i)	Explain Bronsted-Lowry theory of acids and bases. What is meant by conjugate acid basepair give examples?	Short/ Long

(ii)	What is Buffer solution? Explain how it resists the change of pH by adding small amount of acid and base. Give the applications of buffer solution.	Short
(iii)	Describe Lewis theory of acids and bases. What are the advantages of this theory over Lowry Bronsted theory?	Short
	NUMERICALS Do practice from book exercise and solved example **Topics** pH numericals	Short
	CHAPTER#9 Chemical Kinetics	
(i)	Enlist various factors which influence on the rate of chemical reactions and describe all factors?	Long
(ii)	Explain in terms of collision theory how the reaction rate increases with the rise of temperature.	Short
(iii)	What is meant by energy of activation and activated complex? Explain with the help of potential energy diagram	Short
(iv)	Define the following: (a) Rate of reaction (b) Velocity of reaction (c) Order of reaction (d) Rate constant (e) threshold energy (f) activation energy	short
	NUMERICALS Do practice from book exercise and solved example **Topics** Calculation of rate constant, rate, of reaction , order of reaction	Long
	CHAPTER#10 Solution and Colloids	
(i)	What does an Ideal solution means? Give four characteristics to distinguish between ideal and non ideal solution.	Short
(ii)	Define osmosis and osmotic pressure. Give four daily life examples of osmosis.	Short
(iii)	What are colligative properties? And discuss elevation in boiling point and depression in freezing point.	Short
(iv)	Differentiate among true solution, colloidal solution and suspension on the bases of. (i) Particle size (ii) Visibility	Short
	CHAPTER#11 Thermochemistry	
(i)	State and explain First law of Thermodynamics. Derive pressure-volume work of a system	Long
(ii)	Discuss the applications of the First law of thermodynamics at constant pressure and constant volume.	Long

(iii)	State and explain Hess's Law of enthalpy summation. Discuss its applications.	Short
(iv)	Explain Exothermic and Endothermic reactions with the help of the energy diagram	Short
(v)	What is Born Haber cycle. Draw a fully Born Haber cycle for Rubidium chloride (RbCl) and determine the lattice energy byusing the following values (All in kJ/mol) (i) $I.P_{1st}$ of Rb = 403 kJ/mol (ii) Electron Affinity of Cl = -349 kJ/mol (iii) Bond energy of Cl_2 = 242 kJ/mol (iv) Sublimation energy of Rb = 86.5 kJ/mol (v) Heat of formation of = -430.5 kJ/mol	Short/ Long
	CHAPTER#12 Electrochemistry	
(i)	Define redox reaction and balance any oneof the following equations by ion electron method. a) $MnO_4^- + SO_3^{-2} \longrightarrow Mn^{+2} + SO_4^{-2}$ (Acidic) b) $Cl_2 + OH^- \longrightarrow Cl^- + ClO_3^- + H_2O$ (Basic) c) $Cr_2O_7^{-2} + H^+ + I_2 \longrightarrow Cr^{+3} + IO_3^- + H_2O$ (Acidic)	Long
(ii)	Define electrode potential. Draw a cell diagram of copper hydrogen galvanic cell. Write down the half cell reactions and explain how the electrode potential of copper is determined.	Long
(iii)	What is difference between primary and secondary cell. Sketch the diagram of dry cell and explain its working	Short
(iv)	Define the following: • Primary and secondary cell • Oxidation and reduction • Oxidizing agent and reducing agent • Oxidation number • Redox reactions • Standard hydrogen electrode • Standard electrode potential	Short
(v)	What is corrosion? What causes it to form? What can be done to prevent its formation?	
(vi)	Define fuel cell and explain its construction and working with the help of diagram.	

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PREPARATION PAPER OF XI –COMPUTER

SECTION B
SHORT QUESTIONS/ANSWERS

CHAPTER NO.1: INFORMATION TECHNOLOGY

1. Difference between hardcopy and softcopy.
2. Define hard disk with its mechanism.
3. Difference between source code and o18. bject code.
4. Define application software.
5. What do you know about printer?
6. Define monitor.
7. Make a list of all input and output devices and explain any two of them.
8. Define ports and its types.
9. Write any four capabilities of computer.
10. Difference between software and hardware.
11. Define computer buses and its types.
12. What do you know about cache and registers?
13. What is pixel and resolution?
14. Difference between impact and non impact printer.
15. Define CD-Rom and DVD Rom.
16. Difference between storage and memory.
17. Difference between RAM and ROM.
18. Difference between SRAM and DRAM.
19. Difference between DIMM and SIMM.
20. Define terminal and its different types.
21. What do you know about parity bit check?
22. Discuss different types of resolution of a monitor.
23. Write some features of LCD monitor.
24. Define cloud storage.

CHAPTER NO.2: INFORMATION NETWORK

25. Define Network and node.
26. Write any three advantage of network.
27. How many types of network used in different fields.
28. Difference between LAN and MAN.
29. Explain any three components of LANs.
30. Write any six abuses of internet.
31. Write any four properties of browsing.
32. Define the following web terminologies:
    * Ethernet * client * anchor * Domain name.
33. Define peer to peer model.

CHAPTER NO.3: DATA COMMUNICATION

34. Explain component of data communication.
35. Difference between :
    - Gateway and bridge
    - Hub and switch
    - Internet and intranet
    - Digital signal and analogue signal

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Contact No: 0321-2108729

36. Define Asynchronous transmission mode.
37. Define simplex, half duplex and full duplex transmission.
38. Write few lines about communication standards.
39. Explain briefly about communication media speed.
40. Write any three advantages of fiber optic cable.
41. Difference between microwave transmission and satellite transmission.
42. Define Token ring.
43. Describe any two communication protocols.
44. Make a list of communication software.
45. Draw a layer cake diagram of OSI model layer.

CHAPTER NO.4: APPLICATION AND USE OF COMPUTERS

46. Write any six fields where computer is used.
47. How does computer is important in information Management.
48. Write any three applications of computer in Business and E-commerce.
49. Write any two positive and two negative impact of computers on people.

CHAPTER NO.5: COMPUTER ARCHITECTURE

50. Explain any two binary coding scheme.
51. Difference between LIFO and FIFO operation.
52. What do you know about addressing memory location.?
53. Write any three disadvantages of three address instruction format.
54. Define the term 'push' and 'pop' in terms of stack organization.
55. Explain briefly about fetching operation.

CHAPTER NO.6: SECURITY , COPYRIGHT AND THE LAW

56. Difference between computer crime and cyber crime.
57. List out computer crime and cyber crime.
58. Define software piracy.
59. Difference between adware and spyware.
60. Difference between computer virus and computer antivirus.
61. Define Encryption and decryption text.

CHAPTER NO.7: OPERATING SYSTEM

62. Define operating system.
63. Write any three functions of operating system.
64. Difference between single user and multiuser operating system.
65. Difference between command line interface and graphical user interface.
66. Define the following:
    * Start button * taskbar * screen saver * desktop
    * my computer * my documents.
67. Write any three properties of windows.
68. What do you know about file management of windows?
69. Write the function of windows explorer.

CHAPTER NO.8: WORD PROCESSING

70. Define Word processor.
71. Write the function of water mark in Ms Word.
72. Write function of Ms word which are not present in Ms Excel.
73. What do you know about formatting document in Ms Word.
74. Define the term 'WYSIWYG'.
75. Write some feature of Word Art.
76. Difference between desktop publishing and web pulishing.
77. Write the function of Mail Merge in Ms word.

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Contact No: 0321-2108729

CHAPTER NO.9: SPREAD SHEET

78. Define Ms Excel.
79. Write some function of Ms Excel.
80. Define the following:
    * Cell * cell address * Formula
81. Write the purpose of the following functions of Ms Excel:
    * SUM * AVERAGE * PRODUCT * POWER * IFSUM

CHAPTER NO.10: INTERNET BROWSING AND USING EMAIL.

82. Define internet.
83. Write some advantages of internet.
84. Define the following
    * search enging * web browsing * web server * web hosting
85. Write any six types of website.
86. Define Email.
87. Write any three advantage and three disadvantage of Email over postal service.

CHAPTER NO. 11: LOGIC GATES AND BOOLEAN ALGEBRA

88. Define Boolean Algebra.
89. Draw a logic circuit of 3-inputs OR gate with truth table.
90. Difference between basic logic gate and universal gate.
91. List out all logic gates with symbol.
92. Define the following Boolean algebra terms:
    * Complement * truth table * constant * variable
    * order of precedence

SECTION 'C'
DESCRIPTIVE QUESTION/ANSWERS

1. Describe computer software with its different types in detail.
2. Describe computer in terms of capacity and data handling.
3. Describe different components of microprocessor in detail.
4. Describe different types of LAN's topology in detail with the help of diagram.
5. Describe transmission of data by direction with the help of diagram and necessary example for each.
6. Describe OSI model layers in detail with necessary details.
7. Make a list of all types of Registers and explain any five of them.
8. Describe different program of computer virus in detail also list out computer antivirus software.
9. Describe different ways of spreading virus from one computer to another or device.
10. Describe authentication mechanism / reducing risks in detail.
11. Describe software Piracy and Law.
12. Draw the logic circuit of the following Boolean expressions:
    * Z= A.B + A.B + A.B * Z = ABC + (A+B) * Y = $\overline{(A+B)}$. (C+D)
13. Verify the following Boolean Algebra Rules:
    * (A+B) (A+C) = A + BC * A + A = A * A+A.B = A

Note:

1. Reading book and lectures are mandatory.
2. All abbreviations and differences are important.
3. All practice work are important.
4. Do not rely only on preparation paper you have to prepare overall for comprehensive paper.

Course Coordinator: Sir Asif Iqbar
Contact No: 0321-2108729