47001/A0010

Reg. No. | | | | | | | | |

I Semester (NEP) B.Sc. Degree Examination, April/May - 2022

KANNADA (Basic)

ಕನ್ನಡ ಸಂವರ್ಧನೆ

Ability Enhancement Compulsory Course-I

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates:

ಭಾಷೆ ಮತ್ತು ಬರಹದ ಶುದ್ಧಿಗೆ ಗಮನಿಸಲಾಗವುದು.

1) ಕನ್ನಡದ ದೀಪ ಪದ್ಯದ ಸ್ವಾರಸ್ಯವನ್ನು ವಿವರಿಸಿರಿ. **(10)**

(ಅಥವಾ)

ಕನ್ನಡದ ಸಂವರ್ಧನೆ ಕುರಿತಾಗಿ ಬರೆಯಿರಿ.

2) ಬೀಜ ಮತ್ತು ಭೂಮಿ ಕುರಿತಾಗಿ ವಂದನಾಶಿವಾರ ಅಭಿಪ್ರಾಯ ಚರ್ಚಿಸಿರಿ. **(10)**

(ಅಥವಾ)

ನನ್ನೊಳು ನದಿಯೋ ನದಿಯೊಳು ನಾನೋ ಪ್ರಬಂಧದ ಆಶಯ ವಿವರಿಸಿ.

3) ಸಹಸ್ರಬುದ್ದೆಯವರ 'ವಿಜ್ಞಾನಪ್ರಶ್ನೆ'ಯ ಪ್ರಸ್ತುತತೆಯನ್ನು ಬರೆಯಿರಿ. **(10)**

(ಅಥವಾ)

ಡಾ. ಎಚ್ಚೆಸ್ಕೆಯವರ ಮೂರು ವ್ಯಕ್ತಿಚಿತ್ರಗಳ ವಿಶೇಷತೆಯನ್ನು ನಿರೂಪಿಸಿ.

4) ಜಾನಪದರಲ್ಲಿ ಬಿತ್ತನೆಯ ಕಾಲ ಸಡಗರದಿಂದ ಕೂಡಿರುತ್ತದೆ - ಚರ್ಚಿಸಿರಿ. **(10)**

(ಅಥವಾ)

ರತ್ನಾಕರವರ್ಣಿಯ 'ಸಹೋದರರ ಸಮರ'ದ ಸ್ವಾರಸ್ಯವನ್ನು ವಿವರಿಸಿ.

5) ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ ಬೇಕಾದ **ಎರಡಕ್ಕೆ**. **(2×5=10)**

a) ಕನ್ನಡಾಂಬೆಯ ಹಿರಿಮೆ

b) ನಮ್ಮೂರ ಕೆರೆ

c) ದೇವರು ಪೂಜಾರಿ

d) ಸಾಹಿತ್ಯದಲ್ಲಿ ವೈಚಾರಿಕತೆ

[P.T.O.

6) ಒಂದೇ ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿ. (10×1=10)

a) ಕನ್ನಡ ಸಂವರ್ಧನೆಯ ಸಂಪಾದಕರು ಯಾರು ?

b) ಕನ್ನಡಾಂಬೆಯ ಹಿರಿಮೆ – ಗರಿಮೆ ಹಾಡಿಹೊಗಳಿದವರಾರು ?

c) ಕರ್ನಾಟಕದ ಇತಿಹಾಸ ಮತ್ತು ಕನ್ನಡ ಸಾಹಿತ್ಯ ಲೇಖನ ಬರೆದವರಾರು ?

d) ಡಾ. ಶಿವರಾಮ ಕಾರಂತರ ಆತ್ಮಕಥನ ಯಾವುದು ?

e) ಕುವೆಂಪು ಅವರ ಪೂರ್ತಿ ಹೆಸರೇನು ?

f) ಚನ್ನವೀರ ಕಣವಿಯವರು ಜನಿಸಿದ್ದು ಎಲ್ಲಿ ?

g) ಡಾ. ಎಚ್. ನರಸಿಂಹಯ್ಯನವರು ಯಾವ ವಿಶ್ವವಿದ್ಯಾಲಯದ ಕುಲಪತಿಗಳಾಗಿದ್ದರು ?

h) ಭರತೇಶ ವೈಭವ ಯಾವ ಛಂದಸ್ಸಿನಲ್ಲಿ ರಚಿತವಾಗಿದೆ ?

i) ಪಾರ್ವತಿ ಪಿಟಗಿಯವರ ವೃತ್ತಿ ಯಾವುದು ?

j) ಡಾ. ಕೀರ್ತಿನಾಥ ಕುರ್ತುಕೋಟಿಯವರು ಎಲ್ಲಿ ಪ್ರಾಧ್ಯಾಪಕರಾಗಿದ್ದರು ?

46108/47008/47408/48808/48608/48308

Reg. No. | | | | | | | | |

I Semester (NEP) All UG Courses Degree Examination, April/May - 2022

KANNADA (Functional)

ನಮ್ಮ ನಾಡು ನಮ್ಮ ನುಡಿ

Paper - AECC - I

(Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates:

1. ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಸಮಾನ ಅಂಕಗಳು. ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೂ ಉತ್ತರಿಸಿರಿ.
2. ಪ್ರತಿಯೊಂದು ಪ್ರಶ್ನೆಯು 4 ಉತ್ತರಗಳನ್ನು ಒಳಗೊಂಡಿರುತ್ತದೆ. ಸರಿಯಾದ ಉತ್ತರವನ್ನು ಮಾತ್ರ ಗುರುತಿಸಬೇಕು.

1. ಕನ್ನಡ ಅಕ್ಷರ ಮಾಲೆಯಲ್ಲಿ ಎಷ್ಟು ಸ್ವರಗಳಿವೆ ?

A) 13 B) 18 C) 34 D) 02

2. ಅವರ್ಗೀಯ ವ್ಯಂಜನಗಳೆಷ್ಟು ?

A) 10 B) 11 C) 09 D) 8

3. ಸಜಾತೀಯ ಒತ್ತಕ್ಷರ ಗುರುತಿಸಿ.

A) ಅಸ್ತ್ರ B) ಸ್ವಾರ್ಥಿ C) ಅಕ್ಷರ D) ಅಕ್ಕ

4. ಅರವತ್ತು ಅಂಕಿಯನ್ನು ಗುರುತಿಸಿ.

A) 70 B) 80 C) 60 D) 50

5. ಇಂದ ಇದು ಯಾವ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯ ?

A) ಪ್ರಥಮ ವಿಭಕ್ತಿ B) ದ್ವಿತೀಯ ವಿಭಕ್ತಿ C) ಪಂಚಮಿ ವಿಭಕ್ತಿ D) ತೃತೀಯ ವಿಭಕ್ತಿ

6. ಮರದ ಇದು ಯಾವ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯ.

A) ಪ್ರಥಮ ವಿಭಕ್ತಿ B) ಷಷ್ಠಿ ವಿಭಕ್ತಿ C) ಸಪ್ತಮಿ ವಿಭಕ್ತಿ D) ಪಂಚಮಿ ವಿಭಕ್ತಿ

[P.T.O.

7. ಹೆಳವ ಯಾವನಾಮ ಪದವಾಗಿದೆ ?

A) ರೂಢನಾಮ B) ಅಂಕಿತನಾಮ C) ಅನ್ವರ್ಥಕನಾಮ D) ಯಾವುದು ಅಲ್ಲ

8. ಉತ್ತಮ ಪುರುಷವಾಚಕ ಸರ್ವನಾಮ ಪದ ಯಾವುದು ?

A) ಅವನು B) ಅದು C) ನಾನು D) ತಾನು

9. ಇದು ತರಕಾರಿ ಪದವಲ್ಲ ?

A) ರಾಗಿ B) ಮೂಲಂಗಿ C) ಬದನೆಕಾಯಿ D) ಈರುಳ್ಳಿ

10. ದಿನಸಿ ಪದಾರ್ಥವನ್ನು ಗುರುತಿಸಿ.

A) ಗಜ್ಜರಿ B) ಹಿರೇಕಾಯಿ C) ಈರುಳ್ಳಿ D) ಜೀರಿಗೆ

11. ಕುವೆಂಪು ವಿಶ್ವವಿದ್ಯಾಲಯ ಎಲ್ಲಿದೆ ?

A) ಬೆಂಗಳೂರು B) ಬೆಳಗಾವಿ C) ಶಿವಮೊಗ್ಗ D) ಧಾರವಾಡ

12. ಕೃಷ್ಣದೇವರಾಯ ವಿಶ್ವವಿದ್ಯಾಲಯ ಎಲ್ಲಿದೆ ?

A) ಬೆಳಗಾವಿ B) ವಿಜಯಪುರ C) ಹಂಪಿ D) ಬಳ್ಳಾರಿ

13. ರಾಣಿ ಚೆನ್ನಮ್ಮ ವಿಶ್ವವಿದ್ಯಾಲಯ ಎಲ್ಲಿದೆ ?

A) ಧಾರವಾಡ B) ಬೆಳಗಾವಿ C) ವಿಜಯಪುರ D) ಬಳ್ಳಾರಿ

14. ದ್ವಿದಳ ಧಾನ್ಯಗಳು ಯಾವವು ?

A) ಜೋಳ-ಭತ್ತ B) ಗೋಧಿ-ರಾಗಿ C) ಭತ್ತ-ರಾಗಿ D) ತೊಗರಿ-ಕಡಲೆ

15. ಕಾಫಿ ಉತ್ಪಾದಿಸುವ ಜಿಲ್ಲೆ ಯಾವುದು ?

A) ಬೆಳಗಾವಿ B) ಚಿಕ್ಕಮಂಗಳೂರು C) ಕಲಬುರ್ಗಿ D) ಬೀದರ

16. ಹೂವಿನ ಬೆಳೆಯನ್ನು ಗುರುತಿಸಿ.

A) ಮಾವು B) ನಿಂಬೆ C) ಚಿಕ್ಕು D) ಮಲ್ಲಿಗೆ

17. ವಾಣಿಜ್ಯ ಬೆಳೆ ಯಾವುದು ?

A) ಸೂರ್ಯಕಾಂತಿ B) ಗೋಧಿ C) ಭತ್ತ D) ರಾಗಿ

18. ಗದಾಯುದ್ಧ ಯಾರ ಕೃತಿ ?

A) ಪಂಪ B) ರನ್ನ C) ನಾಗಚಂದ್ರ D) ಪೊನ್ನ

19. ರಾಘವಾಂಕನ ಕೃತಿ ಯಾವುದು ?

A) ಆದಿ ಪುರಾಣ B) ಮದನ ತಿಲಕ C) ಹರಿಶ್ಚಂದ್ರ ಕಾವ್ಯ D) ಪಂಚತಂತ್ರ

20. ಕುವೆಂಪು ಅವರ ಕೃತಿ ಯಾವುದು ?

A) ಶ್ರೀರಾಮಾಯಣ ದರ್ಶನಂ B) ನಾಕುತಂತಿ
C) ಮಾರ್ಗ D) ದಾಟು

21. ಇವರಲ್ಲಿ ಸಂಗೀತ ವಿದ್ವಾಂಸರನ್ನು ಗುರುತಿಸಿ.

A) ಕಲ್ಪನಾ B) ಲೋಕೇಶ C) ಕೆ. ವೆಂಕಟಪ್ಪ D) ಗಂಗೂಬಾಯಿ ಹಾನಗಲ್

22 ಸಿಮುಖ ಯಾವ ಮನೆತನದ ಮೂಲ ಪುರುಷ ?

A) ಶಾತವಾಹನರು B) ಕದಂಬರು C) ಗಂಗರು D) ಚಾಲುಕ್ಯರು

23 ಕದಂಬರ ರಾಜಧಾನಿ ಯಾವುದು ?

A) ಪೈಠಾಣ B) ಕಲ್ಯಾಣ C) ಬನವಾಸಿ D) ಬಾದಾಮಿ

24 ದ್ವಾರ ಸಮುದ್ರ ಇದು ಯಾರ ರಾಜಧಾನಿ ?

A) ಹೊಯ್ಸಳರು B) ಕದಂಬರು C) ಗಂಗರು D) ಚಾಲುಕ್ಯರು

25 ಇವರು ಚಿತ್ರರಂಗದ ಕಲಾವಿದರು.

A) ಪುಟ್ಟರಾಜ ಗವಾಯಿ B) ಶಂಕರನಾಗ C) ಪಾರ್ತಿಸುಬ್ಬ D) ಶೇಷಣ್ಣ

26 ಗುಡವಿ ಪಕ್ಷಿಧಾಮ ಯಾವ ಜಿಲ್ಲೆಯಲ್ಲಿ ಇದೆ ?

A) ಬೆಂಗಳೂರು B) ಬೆಳಗಾವಿ C) ಶಿವಮೊಗ್ಗ D) ಕೊಡಗು

[P.T.O.

27. ಆದಿಚುಂಚನಗಿರಿ ವನ್ಯಜೀವಿಧಾಮ ಎಲ್ಲಿದೆ ?

A) ಮಂಡ್ಯ B) ಕೊಡಗು C) ಬೆಳಗಾವಿ D) ಉಡುಪಿ

28. ಬಾರಾಕಮಾನ್ ಯಾವ ಜಿಲ್ಲೆಯಲ್ಲಿ ಇದೆ ?

A) ಬೆಳಗಾವಿ B) ವಿಜಯಪುರ C) ಮೈಸೂರು D) ಹಾಸನ

29. ಗೋಮಟೇಶ್ವರನ ಮೂರ್ತಿ ಯಾವ ಊರಲ್ಲಿ ಇದೆ ?

A) ಶ್ರವಣಬೆಳಗೊಳ B) ರಾಯಚೂರು C) ಶಿರಸಿ D) ಚಿತ್ರದುರ್ಗ

30. ಪಕ್ಷಿವಾಚಕ ಪದ ಯಾವುದು ?

A) ಎಮ್ಮೆ B) ಎತ್ತು C) ಕರಡಿ D) ಪಾರಿವಾಳ

31. ಪಶುವಾಚಕ ಪದ ಯಾವುದು ?

A) ಎತ್ತು B) ಗಿಳಿ C) ನವಿಲು D) ಪಾತರಗಿತ್ತಿ

32. ಇವುಗಳಲ್ಲಿ ಯಾವುದು ಪಕ್ಷಿಗಳ ಶಾರೀರಿಕವಾಚಕ ಪದವಲ್ಲ ?

A) ತಲೆ B) ಕುತ್ತಿಗೆ C) ಪುಕ್ಕ D) ಕೈ

33. ಕನ್ನಡದಲ್ಲಿ ಎಷ್ಟು ದೀರ್ಘಸ್ವರಗಳಿವೆ ?

A) 9 B) 6 C) 8 D) 7

34. ಆತ್ಮಲಿಂಗ ಇರುವ ಸ್ಥಳ ಯಾವುದು ?

A) ಗೋಕರ್ಣ B) ಉಡುಪಿ C) ಧರ್ಮಸ್ಥಳ D) ಶೃಂಗೇರಿ

35. ಮರದಲ್ಲಿ ಇದು ಯಾವ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯ ?

A) ಪ್ರಥಮ ವಿಭಕ್ತಿ B) ತೃತೀಯ ವಿಭಕ್ತಿ C) ಚತುರ್ಥಿ ವಿಭಕ್ತಿ D) ಸಪ್ತಮಿ ವಿಭಕ್ತಿ

36. ನಮ್ಮ ದೇಶದ ಜನಸಂಖ್ಯೆಯಲ್ಲಿ ಕರ್ನಾಟಕಕ್ಕೆ ಎಷ್ಟನೇ ಸ್ಥಾನವಿದೆ ?

A) 7 B) 9 C) 6 D) 5

37. ಕರ್ನಾಟಕದ ಒಂದು ಚದುರು ಕಿ.ಮೀ.ಗೆ ಎಷ್ಟು ಜನಸಾಂದ್ರತೆ ಹೊಂದಿದೆ ?

A) 200 B) 300 C) 275 D) 350

38. ಕರ್ನಾಟಕದ ಅತೀ ಎತ್ತರವಾದ ಶಿಖರ ಯಾವುದು ?

A) ಕರಾವಳಿ ಬೆಟ್ಟ
B) ಮುಳ್ಳಯ್ಯನ ಗಿರಿಬೆಟ್ಟ
C) ಮಲೆನಾಡು ಬೆಟ್ಟ
D) ಯಾವುದು ಇಲ್ಲ

39. ಕನ್ನಡ ವರ್ಣಮಾಲೆಯಲ್ಲಿ ವ್ಯಂಜನಗಳು ಎಷ್ಟಿವೆ ?

A) 34 B) 35 C) 33 D) 36

40. ಪ್ರಥಮಾ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯ ಗುರುತಿಸಿರಿ.

A) ಅನ್ನು B) ಉ C) ಇಂದ D) ಅಲ್ಲಿ

41. ಗುಂಪಿಗೆ ಸೇರದ ಪದವನ್ನು ಗುರುತಿಸಿರಿ.

A) ಸಕ್ಕರೆ B) ಬೆಲ್ಲ C) ಚಹಾಪುಡಿ D) ಸವತೆಕಾಯಿ

42. ಇದು ಮಧ್ಯಮ ಪುರುಷವಾಚಕ ಸರ್ವನಾಮವಾಗಿದೆ ?

A) ತಾನು B) ತಾವು C) ನೀವು D) ಅವನು

43. ಯಾವುದು ಮಾನವನ ಶಾರೀರಿಕ ಪದವಲ್ಲ ಗುರುತಿಸಿರಿ.

A) ಕೈ B) ಮುಖ C) ಹಲ್ಲು D) ಗರಿ

44. ಕರ್ನಾಟಕದ ರಾಜಧಾನಿ ಯಾವುದು ?

A) ಬೆಂಗಳೂರು B) ಬೆಳಗಾವಿ C) ಮೈಸೂರು D) ವಿಜಯಪುರ

45. ಶ್ರೀವಿಜಯನ ಕೃತಿಯನ್ನು ಗುರುತಿಸಿರಿ.

A) ಪಂಚತಂತ್ರ B) ಕವಿರಾಜಮಾರ್ಗ C) ಆದಿಪುರಾಣ D) ವಡ್ಡಾರಾಧನೆ

46. ಸವದತ್ತಿಯ ಪ್ರಸಿದ್ಧವಾದ ದೇವಸ್ಥಾನ ಯಾವುದು ?

A) ಯಲ್ಲಮ್ಮನ ದೇವಸ್ಥಾನ
B) ಅಲ್ಲಮನ ದೇವಸ್ಥಾನ
C) ಸಿದ್ಧಾರೂಢರ ದೇವಸ್ಥಾನ
D) ಮಹಾಲಿಂಗೇಶ್ವರ ದೇವಸ್ಥಾನ

47. ಸಂಬಂಧವಾಚಕ ಅಲ್ಲದ ಪದವನ್ನು ಗುರುತಿಸಿರಿ.

A) ಅತ್ತೆ B) ಮಾವ C) ಮರ D) ಅಳಿಯ

48. ಮಾನವನ ಶಾರೀರಿಕ ಪದವನ್ನು ಗುರುತಿಸಿರಿ.

A) ಅಂಗೈ B) ಪುಕ್ಕ C) ಗರಿ D) ಕೊಂಬು

49. ತಿಂಡಿ-ತಿನಸು ಅಲ್ಲದ ಪದವನ್ನು ಗುರುತಿಸಿರಿ.

A) ರೊಟ್ಟಿ B) ಸಾಂಬರು C) ಹೂವು D) ಇಡ್ಲಿ

50. ಇದು ವೃಕ್ಷವಾಚಕ ಪದವಲ್ಲ.

A) ಕೊತಂಬರಿ B) ಮಾವು C) ತೆಂಗು D) ಶ್ರೀಗಂಧ

51. ಏಳುಸುತ್ತಿನ ಕಲ್ಲಿನ ಕೋಟೆ ಯಾವ ಊರಲ್ಲಿ ಇದೆ ?

A) ಹಾಸನ B) ಬೆಳಗಾವಿ C) ಚಿತ್ರದುರ್ಗ D) ಕೊಡಗು

52. ಇವುಗಳಲ್ಲಿ ಯಾವುದು ಕರ್ನಾಟಕದ ಜಿಲ್ಲೆ ಅಲ್ಲ ಗುರುತಿಸಿರಿ.

A) ಬೆಳಗಾವಿ B) ಬಾಗಲಕೋಟೆ C) ಧಾರವಾಡ D) ಖಾನಾಪೂರ

53. ಕಾವೇರಿ ನದಿಯ ಉಗಮ ಸ್ಥಾನ ಯಾವುದು ?

A) ತಲಕಾವೇರಿ B) ತಲಕಾಡು C) ತುಂಗಾ D) ಗಂಗಾ

54. ಕನ್ನಡ ಅಕ್ಷರ ಮಾಲೆಯ ಒಟ್ಟು ಅಕ್ಷರಗಳು ಎಷ್ಟು ?

A) 49 B) 48 C) 46 D) 45

55. ತುಟಿಯ ಸಹಾಯದಿಂದ ಉಚ್ಚರಿಸಲ್ಪಡುವ ಅಕ್ಷರ ಯಾವುದು ?

A) ಟ B) ಕ C) ಗ D) ಪ

56. ಕನಕದಾಸರ ಕೃತಿಯನ್ನು ಗುರುತಿಸಿರಿ.

A) ಜೈಮಿನಿ ಭಾರತ B) ರಾಮಧಾನ್ಯಚರಿತೆ C) ಸಮಯ ಪರೀಕ್ಷೆ D) ಪಂಚತಂತ್ರ

57. ದ್ವಿತೀಯ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯವನ್ನು ಗುರುತಿಸಿರಿ.

A) ಉ B) ಇಂದ C) ಅನ್ನು D) ಅಲ್ಲಿ

58. ಮರಕ್ಕೆ ಇದು ಯಾವ ವಿಭಕ್ತಿ ಪ್ರತ್ಯಯವಾಗಿದೆ ?

A) ಪ್ರಥಮ ವಿಭಕ್ತಿ B) ತೃತೀಯ ವಿಭಕ್ತಿ C) ಸಪ್ತಮಿ ವಿಭಕ್ತಿ D) ಚತುರ್ಥಿ ವಿಭಕ್ತಿ

59. ಯಕ್ಷಗಾನದ ಕಲಾವಿದರನ್ನು ಗುರುತಿಸಿರಿ.

A) ಎನ್. ಬಸವರಾಜ B) ಚಿಂದೋಡಿ ಲೀಲಾ

C) ಏಣಗಿ ಬಾಳಪ್ಪ D) ಕೆರೆಮನೆ ಶಿವರಾಮ ಹೆಗಡೆ

60. ರಂಗಭೂಮಿ ಕಲಾವಿದರನ್ನು ಗುರುತಿಸಿರಿ.

A) ಗುಬ್ಬಿ ವೀರಣ್ಣ B) ಪಾರ್ಥಿಸುಬ್ಬ C) ಕಾಳಿಂಗ ನಾವುಡ D) ಯಾರು ಅಲ್ಲ

47002/47702

Reg. No. | | | | | | | | | |

I Semester (NEP) B.Sc. Degree Examination, April/May - 2022

ENGLISH (AEC)

Generic English -I

(Regular)

Time : 2 Hours **Maximum Marks : 60**

I. Answer the following questions in a word, a phrase or a sentence each: **(10×1=10)**

1) What is the commonest of all liquids?

2) Expand BBC?

3) Who is Tembu?

4) What did Baldeo carry with him?

5) Where do the cattle quench their thirst?

6) Who translated Vachana 820?

7) Who will make the temples for Shiva?

8) What is the theme of the poem 'To India, My Native Land'?

9) Which of the two roads was chosen by the narrator in the poem 'Road Not Taken'?

10) How was India Worshipped in the past?

II. a) How does Soil erosion occur and what are the chief factors that cause it?**(1×10=10)**

(OR)

b) How are death, menacing threat and Perils of nature described in the story 'The Tiger in the Tunnel'?

III. a) How does Henry Derozio depict nationalism and past glory of India in the Poem 'To India, my Native Land'? **(1×10=10)**

(OR)

b) Bring out the symbolism presented in the poem 'The Road Not Taken'?

[P.T.O.

IV. Answer any **TWO** of the following questions: **(2×5=10)**

1) Introduce yourself before a panel of interview members highlighting your strengths.

2) Write five sentences on seeking permission using 'may, could, can, do you mind and would you mind'.

3) Write instructions on the task of 'Preparing tea' in a Paragraph by using the words- Such as, firstly, after this, next, then, the next step is, subsequently, in the following stage, etc.

4) Draft five different congratulatory sentences on the ocassion of your friend's success in IAS exam.

V. Answer any **FOUR** of the following Sets: **(4×5=20)**

a) **Use the following words as directed:** **(5×1=05)**

1) 'Explanation' as a verb in a sentence.

2) 'Accept' as a noun in a sentence.

3) 'Quick' as an adverb in a sentence.

4) 'accusation' as a verb in a sentence.

5) 'Shoe' as an adjective in a sentence.

b) **Fill in the blanks with the suitable articles:** **(5×1=05)**

1) My brother came in-------day or two.

2) It was-------interesting Poem.

3) I am--------university student.

4) Mr Rajan is holding--------honorary Position.

5) This is--------Pen, which I lost yesterday.

C) **Fill in the blanks with suitable prepositions:** **(5×1=05)**

1) Don't stand--------tree, when there is lightning.

2) It rained---------two hours this morning.

3) Ashita is junior-------- me.

4) His performance is not--------the mark.

5) Tara is dressed--------dark colours.

d) **Convert the following direct questions into indirect questions.** (5×1=05)

1) Are you joining for dinner?
2) Can you finish the project by tomorrow?
3) Was she late for the function?
4) Where is the canteen?
5) Will he learn English quickly?

e) **Frame the negative questions:** (5×1=05)

1) She is fond of Italian food.
2) The boy got what he desired.
3) He sings a song melodiously.
4) They live in London.
5) Jyothi has arrived yesterday.

f) Frame the questions as directed; (5×1=05)

1) I read story books in my leisure time. (Frame wh question so as to get the underlined word as answer)
2) Virat led the team to victory (frame wh question so as to get the underlined word as answer)
3) Let us Play,-------(tag)
4) The Olympic champion comes from Assam (frame Yes/No question)
5) I like eggs (frame yes/No question)

47005/A0050

Reg. No. | | | | | | | | |

I Semester (NEP) B.Sc. Degree Examination, April/May - 2022

HINDI

१) कहानी कुंज २) हिन्दी भाषा के विविध रूप

Paper - AECC

(Regular 2021-22 Onwards Syllabus)

Time : 2 Hours **Maximum Marks : 60**

I. किन्हीं दस प्रश्नों के उत्तर लिखिए। **(10×1=10)**

1. 'कहानी कुंज' किताब के संपादक का नाम ------

   a) जयप्रकाश

   b) डॉ. पूर्णिमा आर

   c) डॉ. राजेंद्र पोवार

2. "कफन" कहानी में माधव की पत्नी का नाम --------

   a) सावित्री

   b) ममता

   c) बुधिया

3. "आकाशदीप" कहानी किस लेखक ने लिखी?

   a) प्रेमचंद

   b) संजीव

   c) जयशंकर प्रसाद

4. "आदमी का बच्चा" के रचनाकार का नाम -------

   a) अमरकांत

   b) यशपाल

   c) उदय प्रकाश

[P.T.O.

5. चन्दर और आनन्द किस कहानी के पात्र हैं?

a) आकाश दीप

b) खोयी हुई दिशायें

c) सलाम

6. "अपरिचित" कहानी के रचनाकार का नाम -----

a) जयशंकर प्रसाद

b) मोहन राकेश

c) यशपाल

7. अमरकान्त जी की कहानी का नाम -----

a) कफन

b) डिप्टी कलक्टरी

c) साइकिल

8. उदय प्रकाश को किस पुरस्कार से सम्मानित किया है?

a) साहित्य अकादमी पुरस्कार

b) साहित्य पुरस्कार

c) ज्ञानपीठ पुरस्कार

9. "ब्लैक होल" कहानी के लेखक का नाम -----

a) यशपाल

b) संजीव

c) मोहन राकेश

10. अलकाजी के बेटे का नाम ---- है।

a) मोहन

b) अंकुश

c) अंकुर

11. "ब्लैक होल" कहानी में पी.पी. का अर्थ -------- है।
    a) पंच परमेश्वर
    b) परमेश्वर प्रसाद
    c) प्रसाद परमेश्वर
12. "सलाम" कहानी के रचनाकार का नाम -------- है।
    a) उदय प्रकाश
    b) ओम प्रकाश वाल्मीकि
    c) मोहन राकेश
13. "कहानी कुंज" किताब में कितनी कहानियाँ हैं?
    a) 8
    b) 9
    c) 10
14. "कफन" कहानी में माधव किसका बेटा है।
    a) बुधिया
    b) घीसू
    c) रमेश

II. किन्हीं तीन की ससंदर्भ व्याख्या कीजिए। (3×5=15)

1) 'मैं सोच रहा हुँ कोई बाल–बच्चा हो गया तो क्या होगा? सोंठ,गुढ तेल कुछ भी तो नहीं घर में।'
2) "जब इसका कोई नाम नहीं है, तो हम लोग इसे चम्पादीप कहेगें।"
3) तुम चाहे जो कुछ बनो चन्दर, अच्छे या बुरे, मेरे लिए एक–से रहोगे।
4) जेब में कुल पचांस रुपये नब्बे पैसे बचे है, और आज पच्चीस तारीख है।
5) छि! डॉली ऐसे बातें नहीं कहते! "आया ने धमकाया" आदमी के बच्चे को ऐसे थोडे ही मारते हैं।

III. किन्हीं दो प्रश्नों का उत्तर लिखिए? (2×10=20)

1) "कफन" कहानी का सारांश लिखिए?
2) "आदमी का बच्चा" इस कहानी से डॉली का चित्रण कीजिए?

[P.T.O.

3) 'अपरिचित' कहानी का सारांश लिखिए।

4) 'ब्लैक होल' कहानी में से अलकाजी के स्वभाव का वर्णन कीजिए।

IV. किन्हीं पाँच प्रश्नों का उत्तर लिखिए। **(5×2=10)**

1) राजभाषा किसे कहते है। एक उदाहरण दीजिए?

2) हिन्दी भाषा के विविध रुप कौन से है?

3) बोलचाल की भाषा का अर्थ लिखिए?

4) राजभाषा हिन्दी के स्वरुप का फॉर्मुला किसने पेश किया और उसे कब स्वीकारा?

5) मानक भाषा किसे कहते है?

6) राज्यभाषा किसे कहते है, लिखिए?

7) संपर्क भाषा किसे कहते है?

V. किसी एक प्रश्न का उत्तर लिखिए। **(1×5=5)**

1) राष्ट्रभाषा राष्ट्रीय एकता की कडी है स्पष्ट कीजिये।

2) हिन्दी भाषा के विविध रुपों पर प्रकाश डालिए।

47032/A360

Reg. No. | | | | | | | | |

I Semester (NEP) B.Sc.6 Degree Examination, April/May - 2022

PHYSICS

Paper : DSC - I

(Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates:

1. **Calculators can be used to calculate problems.**
2. **Write intermediate steps during problems.**

1. Answer any **Six** questions. **(6×2=12)**

a. Write expression for position vector of centre of mass of an isolated system.

b. Define torque.

c. What are geostationary satellites?

d. State parallel axis theorem.

e. Define Poisson's ratio.

f. Write expression for twisting couple per unit twist.

g. Define surface tension.

h. How viscosity of liquid varies with temperature ?

2. Answer any **one** full question "a and b" OR "c and d".

a) Derive an expression for instantaneous velocity of rocket. **(10)**

b) State and prove work-Energy theorem. **(2)**

(OR)

c) Derive an expression for final velocities in case of elastic collision in one dimension. **(10)**

d) A railway carriage of mass 10,000kg moving with a speed of 15m/s strikes a stationary carriage of same mass. After collision carriages get coupled and move together. What is their commen speed? **(2)**

[P.T.O.

3. Answer any **One Full** question "a and b" OR "c and d".

a) State and prove Kepler's third law of planetary motion. **(10)**

b) Escape velocity of the earth is 11.2km/s. Find the escape velocity of a planet whose radius is twice and mass is thrice to that of the earth. **(2)**

(OR)

c) Derive an expression for moment of inertia of a rectangular lamina. **(10)**

i. About an axis through its centre and Parallel to its plane and.

ii. About an axis perpendicular to its plane.

d) A circular ring has M.I. $30\times10^{-}kgm^{-}$ about centre of gravity and perpendicular to its plane. Find M.I of the ring about the diameter. **(2)**

4. Answer any one full question; 'a and b' OR 'c and d'.

a) Derive the relation connecting between Young's modulus, Bulk modulus and modulus of rigidity. **(10)**

b) Derive an expression for time period of torsional pendulum. **(2)**

(OR)

c) Obtain an expression for Young's modulus of a beam supported at its ends and loaded at middle. **(10)**

d) A metal rod of length 1m and breadth 0.03m and thickness 2.5mm is clamped at one end and loaded at free end with 3kg. Calculate the depression produced. Given-Young's modulus is $4\times10^{11}Nm^{-2}$. **(2)**

5. Answer any one full question; 'a and b' OR 'c and d'

a) Describe Quinke's method with necessary theory for the determination of surface tension of mercury. **(10)**

b) Find the height to which water rises in a capillary tube of diameter 1mm, if surface tension of water is $70\times10^{-3}N/\text{m}$ and angle of contact is 60^0. **(2)**

(OR)

c) Derive poiseuille's equation for the flow of liquid in the tube. **(10)**

d) Find the viscous drag acting on steel ball of diameter 2 mm and moving with terminal velocity $5\times10^{-2}m/s$ in a liquid. Given - coefficient of viscosity is $0.6Nms^{-2}$. **(2)**

47023/A0230

Reg. No. | | | | | | | | |

I Semester (NEP Scheme) B.Sc.6 Degree Examination, April/May - 2022
CHEMISTRY (DSC)
(Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates:

1. **All questions are compulsory**
2. **Draw neat diagrams and give equations wherever necessary.**

1. Answer any **Six** Questions. Each question carries 2 marks. **(6×2=12)**

a) Define i) Accuracy ii) Precision.

b) What is Redoxtitration ? Give an example.

c) State Heisenberg's uncertainty principle.

d) State Hund's rule.

e) Explain wurtz reaction with an example.

f) What are nucleophiles ? Give two examples.

g) Define most probable velocity.

h) State the law of corresponding states.

2. Answer any **Three** Questions. Each question carries 4 marks. **(3×4=12)**

a) Write about determinate errors and their minimisation.

b) What is titration curve ? Explain the titration curve of strong acid and strong base.

c) Explain the theory of metal ion indicators with reference to Eriochrome Black-T used in EDTA titrations.

d) 5cc of 32N concentrated sulphuric acid is diluted to 250 cc. Calculate the normality and molarity of the diluted solution.

[P.T.O.

3. Answer any **Three** Questions. Each question carries 4 marks. (3×4=12)

a) Sketch and explain hydrogen spectrum.

b) Derive an expression for energy of electron in hydrogen atom.

c) Explain i) Principal quantum number

ii) Azimuthal quantum number.

d) State and explain i) pauli's exclusion principle.

ii) (n+1) Rule.

4. Answer any **three** questions. Each question carries 4 marks. (3×4=12)

a) Explain Inductive effect with examples.

b) Explain i) Huckel's rule of Aromatility.

ii) Ozonolysis of propene.

c) Explain the mechanism of SN^2 reaction.

d) Give the mechanism of nitration of Benzene.

5. Answer any **three** questions. Each question carries 4 marks. (3×4=12)

a) Derive the relation between critical constants and van der waal's Constants.

b) Derive the Bragg's equation

c) Explain i) Collision Diameter.

ii) Mean free path.

d) Calculate the amount of organic substance extracted when 500 cc of ether is shaken with 1000 cc of aqueous solution containing 10gm of substance.

(Distribution coefficient of the substance between ether and water is 3)

47030/A0300

Reg. No. | | | | | | | | | |

I Semester B.Sc. 6 Degree Examination, April/May - 2022
MATHEMATICS (DSC)
Algebra - I and Calculus - I
Paper - 21BSC1C1MAT1L
(Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates:

1. **Answer any Six questions from question number 1.**
2. **Answer any three questions from question number 2,3,4 and 5.**

1. Answer any Six of the following. **(6×2=12)**

a. Define symmetric and skew symmetric matrices.

b. Find the rank of the matrix $\begin{bmatrix} 2 & -1 & 2 \\ -1 & 2 & -1 \\ 1 & -1 & 2 \end{bmatrix}$.

c. Find $\frac{ds}{dx}$ for the curve $y = c\sinh\left(\frac{x}{c}\right)$.

d. Define evolute of the curve.

e. Show that $f(x) = \frac{x}{|x|}$ is discontinuous at x=0.

f. Evaluate $\lim_{x\to 0}\frac{1-\cos x}{x^2}$.

g. Find the n^{th} derivative of $\frac{1}{ax+b}$

h. Find the n^{th} derivative of $\sin 4x \cos 2x$.

2. Answer any **Three** of the following. **(3×4=12)**

a) State cayley Hamilton theorem and verify cayley hamilton theorem for the matrix $A=\begin{bmatrix}1 & 2\\ 3 & 5\end{bmatrix}$.

b) Find the rank of a matrix $\begin{bmatrix}1 & 1 & 1 & 6\\ 1 & -1 & 2 & 5\\ 3 & 1 & 1 & 8\\ 2 & -2 & 3 & 7\end{bmatrix}$ by reducing it to echelon form.

c) Prove that the rank of the matrix does not alter by interchanging of any two rows.

d) Test the consistency of system of equations. x+y+z=6, 2x-y+3z=9, x-y+z=2 and solve.

3. Answer any **three** questions of the following. **(3×4=12)**

a) With usual notation prove that $\tan\phi = r\frac{d\theta}{dr}$

b) Find the length of the perpendicur form the pole to the tangent for the curve $r^2 = a^2\cos 2\theta$

c) Derive the radius of Curvature for the cartesian form.

d) Find the equation circle of Curvature for the curve. $2xy + x + y = 1$ at (1, 1).

4. Answer any **Three** of the following. **(3×4=12)**

a) if $\lim_{x\to a} f(x) = l$ and $\lim_{x\to a} g(x) = \mathrm{m}$ then prove that. $\lim_{x\to a}[f(x)+\mathrm{g}(\mathrm{x})] = l + \mathrm{m}$.

b) State and prove intermediate value theorem.

c) State and prove Rolle's theorem.

d) Expand log(1+x) by Machlaurins theorem upto the power containing x^5.

5. Answer any **Three** of the following. **(3×4=12)**

a) Find the n^{th} derivative of $e^{ax}\cos(bx+c)$.

b) Find the n^{th} derivative of Sinx.Sin2x.Sin3x.

c) State and prove leibnitz theorem for n^{th} derivative of the product of two functions of x.

d) If $y=e^{m\sin^{-1}x}$ then show that $(1-x^2)y_{n+2}-(2n+1)xy_{n+1}-(n^2+m^2)y_n=0$.

10961

Reg. No. | | | | | | | | |

I Semester (All Degree Courses) Degree Examination, April/May - 2022
DIGITAL FLUENCY (Theory)
(Regular)

Time : 1 Hour **Maximum Marks : 25**

Instructions to Candidates :
1. *Answer questions from all the three sections.*
2. *Write question numbers correctly.*
3. *Medium of examination is only in ENGLISH.*

SECTION - A

Answer all **five** questions, Select the most appropriate answer from the options provided. **(5×1=5)**

1. What is the full form of 'AI"?

a. Artificially Intelligent
b. Artificial Intelligence
c. Artificially Intelligence
d. Advanced Intelligence

2. Expansion of "DBMS" is.

a. Data of Binary Management System
b. Database Management Service
c. Database Management System
d. Data backup Management System

3. The following is one of the main parts of IoT.

a. Sensor
b. RAM
c. Cable
d. Monitor

4. How many types of clouds exist?

a. 2
b. 4
c. 6
d. 7

5. Common example of network security implementation is.

a. Password
b. Antivirus.
c. Firewall
d. All of the above.

[P.T.O.

SECTION - B

Answer any **five** of the following in short. **(5×2=10)**

6. Define AI.
7. What is the need for data - science?
8. Mention the main parts of IoT.
9. List out some popular companies working on IoT.
10. What is the term "backup" refers to?
11. Mention the models of cloud.
12. Which are the different types of communications?
13. What are some common barriers to listening?

SECTION - C

Answer any **Two** of the following. **(2×5=10)**

14. a. Machine learning is a fast - growing trend in the health care industry. (true or false?).
    b. --------- -------- Management system is used to manage the storage and retrieval of data (fill in the blanks).
    c. IoT deals with large scale network and IIoT deals with small scale networks (True or False?).
    d. Full form of SAAS is --------- --------- --------- --------- (fill in the blanks).
    e. Malware is the term derived from Malicious software (true or false?).

15. Match the following :

A.	Cloud application	i.	Smart car
B.	Big - Data	ii.	Data storage and Backup
C.	AI	iii.	Protecting files and devices
D.	Internet of things	iv.	Large data in Zettabytes
E.	Encryption	v.	Sensors and actuators

16. Match the following :

A.	Communication	i.	Working together for a common goal
B.	Barrier to communications	ii.	Creating to - do lists.
C.	Collaboration	iii.	Creating positive change through new ideas
D.	Innovation	iv.	Lock of listening skills
E.	Time Management	v.	Understanding, sharing and meaning

35133/42133/A330

Reg. No. | | | | | | | | |

I Semester B.Sc. 3/4 Degree Examination, March - 2022
MATHEMATICS (Optional)
Paper : I : Differential Calculus
(Repeater w.e.f. 2014-15)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates :

1. *Question Paper contains Three Parts A, B, C.*
2. *Answer ALL Questions.*

PART - A

Answer any **TEN** of the following : **(10×2=20)**

1. a) State multiplicative law & trichotomy law.

b) Prove that $|xy| = |x||y| \quad \forall \quad x, y \in R$.

c) Prove that $f(x) = \begin{cases} 3x+1 & : x \le 0 \\ x+1 & : x > 0 \end{cases}$ is continuous at $x = 0$

d) State Intermediate value theorem.

e) Find the n^{th} derivative of $\log(ax+b)$

f) Find the n^{th} derivative of $\sin^2 x$

g) Find the n^{th} derivative of $\sin x . \sin 2x$

h) State cauchys mean value theorem.

i) Verify Lagranges mean value theorem for the function $f(x) = e^x$ in $[0,1]$.

j) Expand sin x by Maclauring theorem.

k) Evaluate $\lim_{x \to 0} \frac{x - \sin x}{x^3}$

l) Evaluate $\lim_{x \to 0} \frac{\log \sin x}{\cot x}$.

[P.T.O.

PART - B

Answer any **FOUR** of the following. **(4×5=20)**

2. State and prove Archimedian property for real numbers.

3. Show that $f(x)=\dfrac{e^{1/x}}{e^{1/x+1}}$ for $x\neq 0$ and $f(0)=0$ is discontinuoun at $x=0$.

4. Find the nth derivative of $e^{ax}\cos(bx+e)$

5. State and prove Lagranges Mean value theorem.

6. Verify Cauchy's mean value theorem for the function $f(x)=\sin x$ & $g(x)=\cos x$ in [a, b]

7. Evaluate $\lim\limits_{x\to 0}\left[\dfrac{1}{x^2}-\dfrac{1}{\sin^2 x}\right]$.

PART - C

Answer any **FOUR** of the following. **(4×10=40)**

8. a) Prove that $|x+y|\leq|x|+|y|$, for all, $x, y\in R$.

   b) If $x, y, z\in R$ then $x^2+y^2+z^2\geq xy+yz+zx$

9. a) If $\lim\limits_{x\to a} f(x)=\perp, \lim\limits_{x\to a} g(x)=m$ then prove that $\lim\limits_{x\to a}[f(x)+g(x)]=l+m$.

   b) A function which is continuous on a closed interval attains its bounds at least once in that interval.

10. a) State and Prove Leibnitz's Theorem for nth derivative of product of two functions.

    b) If $y=(\sin^{-1}x)^2$ Prove that $(1-x^2)y_{n+2}-(2n+1)\times y_{n+1}-n^2y_n=0$.

11. a) State and Prove Taylor's Theorem with Schlomilch Rouches form of Remainder.

    b) Expand $\log[\sec x+\tan x]$ by using Maclaurin's Series.

12. a) Evaluate $\lim\limits_{x\to 1}\left[\dfrac{x}{x-1}-\dfrac{1}{\log x}\right]$

    b) Evaluate $\lim\limits_{x\to 0}\left[\dfrac{e^x-2\cos x+e^x}{x\sin x}\right]$

44033/A0330

Reg. No. | | | | | | | | |

I Semester B.Sc. 5 Degree Examination, March - 2022

MATHEMATICS (OPTIONAL)

ALGEBRA AND CALCULUS - I

Paper : MATDSCT 1.1(W.e.f.2020-2021)

(Repeaters)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates:
1. Question paper contains 3 parts namely A, B and C.
2. Answer all questions.

PART - A

I. Answer any **Ten** of the following: **(10×2=20)**

1. a) Find the reciprocal determinant of $\begin{vmatrix} 1 & -1 \\ -2 & 3 \end{vmatrix}$.

b) Define elementary row transformation of a matrix.

c) Define symmetric and skew - symmetric matrices.

d) If $a>0, b>0$ then prove that $a^2+b^2 \geq 2ab$.

e) Find the value of K if $f(x)=\begin{cases} 4x-1 & \text{for } x\leq 1 \\ x+k & \text{for } x>1 \end{cases}$ is continuous at $x=1$.

f) State Borel covering theorem.

g) Evaluate $\lim\limits_{x\to 0} \dfrac{a^x-1}{b^x-1}$.

h) If $y=\log(ax+b)$ then find y_n.

i) Find the n^{th} derivative of $\sin 3x.\cos 2x$.

j) State cauchy's mean value theorem.

k) Expand cosx by maclaurins theorem.

l) find the value of "c" for $f(x)=x(x-1)$ in $[0, 2]$ by using lagranges mean value theorem.

[P.T.O.

PART - B

II. Answer any **Four** of the following. **(4×5=20)**

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

3) If x, y, z ∈ R then show that $x^2+y^2+z^2 \geq xy+yz+zx$.

4) State and prove Intermediate value theorem.

5) If $\lim_{x\to a} f(x) = l$ and $\lim_{x\to a} g(x) = m$ Then prove that $\lim_{x\to a}[f(x).g(x)] = l.m$

6) Find the n^{th} derivative of $e^{ax}.\cos(bx+c)$.

7) Verify cauchy's mean value theorem for the functions $f(x) = e^x$ and $g(x) = e^{-x}$ in [a, b].

PART - C

III. Answer any **Four** of the following. **(4×10=40)**

8) a) Prove that the rank of matrix in equal to rank of its a transposed matrix.

b) Find the rank of matrix $A = \begin{vmatrix} 6 & 1 & 3 & 8 \\ 4 & 2 & 6 & -1 \\ 10 & 3 & 9 & 7 \\ 16 & 4 & 12 & 15 \end{vmatrix}$ by reducing it to normal form.

9) a) Prove that $|x+y| \leq |x|+|y| \forall x, y \in R$.

b) Examine the continuity of $f(x) = \begin{cases} x.\sin\left(\frac{1}{x}\right), & \text{when } x \neq 0 \\ 0, & \text{when } x = 0 \text{ at } x = 0. \end{cases}$

10 a) If f(x) is continuous in [a, b] then it is bounded in that interval.

b) Evaluate $\lim_{x \to \pi} \frac{\log \sin x}{\log \sin 2x}$.

11) a) State and prove leibritz's theorem for the n^{th} derivative of the product of two functions.

b) If $y = (\sin^{-1} x)^2$ then prove that $(1-x^2)y_{n+2} - (2n+1)xy_{n+1} - n^2 y_n = 0$

12) a) State and prove taylor's theorem with schlomilch and Rouches form of remainder.

b) Expand $\tan^{-1} x$ by using Maclaurin series up to the terms containing x^5.

35124/42124/A240

Reg. No. | | | | | | | | |

I Semester B.Sc. 3/4 Degree Examination, March - 2022

CHEMISTRY (Optional)

(Old Syllabus)

(Repeater)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates :

1. *ALL Questions are Compulsory.*
2. *Answer ALL questions in the Same Answer Book.*
3. *Draw Neat Labelled Diagrams and Equations wherever necessary.*

SECTION - A

I. Answer any **TEN** of the following. **(10×2=20)**

1. a) State two limitations of Bohr's Theory.

b) What is Covalent Bond?

c) Write the significant figures of the following numbers.

i) 7.80×10^{10}

ii) 457.76

d) Define Indicator. Which Indicator is used for the titration of Na_2CO_3 against HCl.

e) Define the Term Recrystalization.

f) Write the Four types of electronic transitions of UV Spectroscopy.

g) What are Azeotropic mixtures? Give an example.

h) Give Law of Corresponding States.

i) State Nernst Distribution Law.

j) Write the electronic configuration of Copper (At.No. 29).

k) What are Andrew's Brotherton?

l) Draw chari and boat forms of Cyclohexane.

[P.T.O.

SECTION - B

II. Answer any **FOUR** of the following. **(4×5=20)**

2. Explain the formation of H_2 molecule on the basis of VBT.
3. Write the significance of four quantum numbers.
4. What is Complexometric titration? Explain in brief the estimation of Zinc using EDTA.
5. Define the term conformation and explain conformation analysis of ethane molecule.
6. Explain the terms
   a) Bathochromic Shift.
   b) Hypochromic Shift.
7. Describe the Nicotin-Water System with neat diagram.

SECTION - C

III. Answer any **FOUR** of the following. **(4×10=40)**

8. a) Explain Bohr-Sommerfeld model of an Atom.
   b) Write a note on errors in Quantitative analysis.

9. a) Explain Stability of Cycloalkanes using Baeyer's Strain Theory.
   b) Explain the chemical method for the determination of the configuration of maleic acid and Fumaric Acid.

10. a) Explain the Optical Isomerison of Lactic Acid.
    b) Explain Steam Distillation in the Purification of Organic Compounds.

11. a) State the Law of Corresponding States and derive reduced equation of State using Vander Waal's equation.
    b) Explain the following terms:
       i) Critical Temperature
       ii) Critical Volume
       iii) Critical Pressure

12. a) Calculate the pH of ammonium acetate solution given that $K_a = 1.175 \times 10^{-3}$ and $K_b = 1.8 \times 10^{-5}$.
    b) Give Principle of U V Spectroscopy and mention the few applications of UV Spectroscopy.

44024/A0240

Reg. No. | | | | | | | | |

I Semester B.Sc.5 (CBCS) Degree Examination, March - 2022
CHEMISTRY(OPTIONAL)
(Repeaters)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates:

1) All questions are compulsory.
2) Draw neat diagrams and give equations wherever necessary.

I. Answer any **Ten** Questions. **(10×2=20)**

1) State Heisenberg's uncertainty principle.
2) Name the series of lines appear in the hydrogen spectrum
3) Write the electronic Configuration of cr(Z=24).
4) Calculate the bond order in O_2 molecule.
5) What are the factors influencing the formation of covalent bond ?
6) What is hybridisation ?
7) What is electromeric effect ?
8) State Huckel's rule.
9) What are electrophiles ? Give two examples.
10) Give the methods of purification of liquids.
11) Calculate the angle strain in cyclopropane
12) What are distereoisomers ? Give an example.

II. Answer any **Three** of the following. **(3×5=15)**

a) Explain Bohr's theory of atomic model.
b) What are quantum numbers ? Give the significance of quantum numbers.

[P.T.O.

c) Explain pauli's exclusion principle and hund's rule for filling electrons in orbitals.

d) Explain the shapes of S.P and d atomic orbitals.

III. Answer any **Three** Questions. **(3×5=15)**

a) Mention the salient features of MOT.

b) Explain the 'Born-Haber' cycle for the formation of sodium chloride.

c) Explain the geometry of pc'5 on the basis of hybridisation.

d) Give the comparison of VBT and MOT.

IV. Answer any **Three** Questions. **(3×5=15)**

a) What are dienes ? Give the Classification of dienes with examples.

b) What are carbanions ? Explain their stability.

c) Explain the preparation of alkenes by.

i) dehydration of alcohols.

ii) dehydrohalogination of alkyl halides.

d) What is ozonolysis ? Explain the ozonolysis of 2-butene.

V. Answer any **Three** Questions **(3×5=15)**

a) What is chromatography ? Explain the column chromatography.

b) Explain the rules for assigning the R and S notations.

c) What are cycloalkanes ? Explain sachse mohr theory of strainless rings.

d) Explain the following with examples.

i) Enentiomers

ii) Epimers

44035/A0350

Reg. No. | | | | | | | | | |

I Semester B.Sc. 5 (CBCS) Degree Examination, March - 2022
PHYSICS
(Repeater)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates:

1. **Calculators can be used for solving problems.**
2. **Write intermediate steps during problem solving .**

PART-A

Answer any **Ten** questions of the following. **(10×2=20)**

1. i) What is centre of mass ?

ii) What is elastic collision ?

iii) A torque of 20Nm is applied on a wheel, initially at rest. Calculate the angular momentum of the wheel after 3 seconds.

iv) State Newton's law of gravitation.

v) Define radius of gyration.

vi) State and explain Hook's law.

vii) What is Cantilever ?

viii) The Poisson's ratio and rigidity modulus of material of wire are 0.285 and $3.5\times10^{10}\,N/m^2$ respectively. calculate the Young's Modulus of the material of wire.

ix) Define Inertial frame of reference.

x) Give fundamental postulates of special theory of relativity.

xi) Calculate the energy of rest mass of electron in ev. Given rest mass of Proton = $1.67\times10^{-27}\,kg$.

xii) Write expression for escape velocity.

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PART - B

Answer Question **No.2** or Question **No.3**

2. a) Derive an expression for velocity of rocket. **(10)**

   b) A steel ball of 1kgs moving with velocity of 12m/s strikers 5kg block, which is initially at rest. The collision is elastic. find the speed of the ball and the speed of the block after collision. **(5)**

(OR)

3. a) Derive an expression for final velocities in case of elestic Collision in one dimension. **(10)**

   b) A mass of 10,000 kg moving with speed of 15m/s strikes stationary mass of same value. After collision masses get coupled & move together what is their common speed? **(5)**

PART - C

Answer Question **No.4** or Question **No.5**

4. a) State and prove Kepler's 3rd law of planetary motion.

   b) Escape velocity of the earth is 11.2km/s find the escape velocity of planet whose radius is twice & mass is thrice to that of the earth.

(OR)

5. a) Derive an expression for Moment of Inertia of rectangular lamina.

   (i) About an axis through its centre and parallel to its plane and.

   (ii) About an axis perpendicular to its plane.

   b) A circular ring has moment of inertia $30\times10^{-3}\,kgm^2$ about centre of gravity and perpendicular to its plane. Find the M.I. of the ring about the diameter.

PART - D

Answer Question **No.6** or Question **No.7**

6. a) Derive the relation connecting between Young's modulus, Bulk modulus, and modulus of rigidity. **(10)**

   b) Calculate young's modulus of material. Given $K=1.5\times10^{11}\,N/m^2;\eta=4.34\times10^{-10}\,Nm^{-2}$

(OR)

7) a) Obtain an expression for Young's Modulus of a beam supported at its ends and loaded at the middle.

b) A metal rod of length 1m and breath 0.03m and thickness 2.5mm is clamped at one end and loaded at free end with 3kg. Calculate the depression produced. Given $Y = 4 \times 10^{11} N/m^{-2}$

PART - E

Answer Question **No.8** or Question **No.9.**

8) a) Describe with neat diagram Michelson Morley experiment and give the concept of nagetive result **(10)**

b) How fast would a rocket have to go relative to an observer for its length to be contracted to 75% of its length at rest. **(5)**

(OR)

9) a) Derive Einstein's mass - energy relation **(10)**

b) Find the velocity at which the mass of the particle is double than its rest mass. **(5)**

42135/35135/A350

Reg. No. | | | | | | | | |

I Semester B.Sc.4 (Non-CBCS) Degree Examination, March - 2022
PHYSICS
(Repeaters)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates:

1. Calculators can be used to solve problems.
2. Write intermediate steps during problem solving.

PART - A

Answer any **Ten** questions of the following.

1. a) Define simple Harmonic motion.

b) What is elastic collision.

c) State Kepler's second law of planetary motion.

d) Define angular momentum.

e) State the theorem of parallel axis.

f) What is compound pendulum ?

g) Define Poisson's ratio.

h) Write the relation connecting Y, K, and η elastic constants.

i) What is the effect of impurities on surface tension of a liquid.

j) Define coefficient of viscosity of a liquid.

k) Calculate the orbital velocity of a satellite moving close to the earth. Given radius of the earth is 6400 km and value of of is $9.8\, ms^{-2}$.

l) Calculate the bending moment of a bar of Young's modulus $20\times10^{10}\, N/m^2$, geometric moment of inertia $4\times10^{-3}\, kgm^2$ and bending radius 2m.

PART - B

Answer any **Four** of the following.

2. Derive an expression for the total energy of a particle executing S.H.M.

3. State and explain theorem of perpendicular axis.

4. Derive an expression for the excess of pressure inside the soap bubble.

5. The escape velocity of the earth is $11.2\,kms^{-1}$ find the escape velocity on a planet whose radius is thrice that of the earth and whose mass is twice that of the earth.

6. A metal disc of mass 1kg and radius 10cm is suspended horizontally by a vertical wire of length 50cm and radius 0.5mm. If the system executes 25 torsional oscillations in two minutes calculate the rigidity modulus of the material of the wire.

7. Calculate the surface tension of water if it rises to a height of $0.5\times10^{-2}m$ in a capillary tube of radius 3mm. Density of water is $1000kg/m^3$ and angle of contact for water is zero.

PART - C

8. State the principle of rocket. Derive an expression for the final velocity of the single stage rocket.

9. Derive an expression for the time period of light spiral spring.

10. Describe an experiment to determine the moment of inertia of flywheel.

11. Define neutral surface. Derive an expression for the bending moment.

12. Derive Poiseuille's formula for the flow of viscous fluid through a narrow tube.

44023/A0230

Reg. No. | | | | | | | | |

I Semester B.Sc. (CBCS) Degree Examination, April - 2023

BOTANY

Biodiversity (Microbes, Algae, Fungi, Archaegoniate)

(Repeater)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates : *Draw neat labelled diagrams wherever necessary.*

I. Answer any **ten** of the following. **(10×2=20)**

1. Capsid.
2. Heterocyst.
3. Conidia.
4. Bacteriophage.
5. Capsule.
6. Neck canal cells.
7. Calyptra.
8. Trabecule.
9. Siphonostele.
10. Peat moss.
11. Circinate vernation.
12. Corolloid roots.

II. Answer any **four** of the following. **(4×15=60)**

a. Write the properties of viruses.

b. Describe sexual reproduction in Bacteria.

(OR)

III. a. Explain lysogenic cycle in viruses.

b. Describe the structure of Bacteria.

P.T.O.

IV. a. Describe a sexual reproduction in vaucheria.

b. With the help of neat labelled diagrams describe uredial and Telial stages in puccinia.

(OR)

V. a. Describe vegetative structure of Oedogonium.

b. Explain reproduction in Fungi.

VI. a. Describe the anatomy of Riccia thallus as in T.S.

b. Describe the structure of L.S of Anthoceros sporophyte.

(OR)

VII. a. Describe general characters of Bryophytes.

b. Describe the L.S. of funaria capsule with neat diagram.

VIII. a. What are fossils? Write a note on lepidocarpon.

b. Give a comparative account of cones of cycas and Gnetum.

(OR)

IX. a. Explain the internal structure of corolloid roots of cycas.

b. Discuss the concept of stelar evolution in pteridophytes.

47022/A0220

Reg. No. | | | | | | | | | |

I Semester B.Sc. (NEP) Degree Examination, March/April - 2023

BOTANY (DSC)

Microbial Diversity and Technology

(Regular)

Time : 3 Hours **Maximum Marks : 60**

Instructions to Candidates : *Draw a neat labelled diagram wherever necessary.*

I. Answer any **six** of the following. **(6×2=12)**

1. M.W. Beijerinck.
2. SEM.
3. Pure culture.
4. Chemotrophs.
5. Lyophilisation.
6. ATCC.
7. Rhizopus.
8. Grain smut of sorghum.

II. Answer any **Three** of the following. **(3×4=12)**

9. Explain the contributions of Dmitri Iwanawski to microbiology.
10. Explain the distribution of microbes in food.
11. Write a note on acidic and basic stains used in Microbiology.
12. Explain the principles and application of light Microscopy.

III. Answer any **Three** of the following. **(3×4=12)**

13. Explain nutritional types of microbes - autotrophs and heterotrophs.
14. What are lithotrophs? Explain.
15. Explain chemical methods of sterilization - phenolic compounds.
16. Explain method of measurement of Bacterial cell.

[P.T.O.

IV. Answer any **Three** of the following. (3×4=12)

17. Explain the structure of TMV.
18. Economic importance of viruses.
19. Write the general characters of prions.
20. Write a brief account on ITCC.

V. Answer any **Three** of the following. (3×4=12)

21. General characters of bacteria.
22. Write a note on mycoplasma.
23. Explain a sexual reproduction in penicillium.
24. Explain sexual reproduction in Phytophthora.

47034/A0340

Reg. No. | | | | | | | | | |

I Semester B.Sc. (NEP) Degree Examination, April - 2023

ZOOLOGY

Cytology, Genetics and Infections-Diseases

(Repeater/Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates:

1) **Attempt all questions - Q I, II, III, IV and V**
ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳನ್ನು ಉತ್ತರಿಸಿರಿ. **Q I, II, III, IV and V**
2) **Draw diagrams wherever necessary.**
ಅವಶ್ಯವಿದ್ದಲ್ಲಿ ಅಂದವಾದ ಚಿತ್ರವನ್ನು ಬಿಡಿಸಿರಿ.

I. Answer any six of the following. **(6×2=12)**
ಕೆಳಗಿನ ಯಾವುದೇ (6) ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

1. Write the Chemical constituents of Plasma membrane.
ಪ್ಲಾಸ್ಮಾ ಮಂಬರೇನಿನ ಕಾರ್ಯಗಳ ಬಗ್ಗೆ ಬರೆಯಿರಿ.
2. What are Peroxisomes?
ರೈಬೋಸೋಮಗಳ ವಿಧಗಳನ್ನು ಬರೆಯಿರಿ.
3. Write the types of DNA and RNA.
DNA ಮತ್ತು RNA ಪ್ರಕಾರಗಳನ್ನು ಬರೆಯಿರಿ.
4. What is Euchromatin and Heterochromatin?
ಯುಕ್ರೋಮ್ಯಾಟಿನ ಮತ್ತು ಹೆಟೆರೋಕ್ರೋಮ್ಯಾಟಿನ ಎಂದರೇನು ?
5. Define Incomplete Dominance.
ಮಲ್ಟಿಪಲ ಅಲ್ಲೀಲಿಸಮನ್ನು ಉದಾಹರಣೆಯೊಂದಿಗೆ ವ್ಯಾಖ್ಯಾನಿಸಿ.
6. What is 'Y' linked inheritance?
'Y' ಲಿಂಕಡ್ ಅನುವಂಶೀಯತೆ ಎಂದರೇನು ?
7. What is Chromosomal aberration?
ಜೀನ ಇಂಟರ ಆಕ್ಸನ್ ಎಂದರೇನು ?
8. What is Filariasis? Write the conservative agent.
ಫಿಲೇರಿಯಾಸಿಸ್‌ನ್ನು ವಿವರಿಸಿ.

P.T.O.

II. Answer any three of the following. **(3×4=12)**

ಯಾವುದಾದರೂ 3 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

9. Explain the fluid Mosaic model of the structure of Plasma-Membrane.
ಪ್ಲಾಸ್ಮಾಮೆಂಬರೇನಿನ ಫ್ಲುಡ ಮೊಸಾಯಿಕ ನಮೂನೆಯನ್ನು ವಿವರಿಸಿರಿ.
10. Write a note on structure and functions of Mitochondrion.
ಮೈಟೊಕೊಂಡ್ರಿಯಾದ ರಚನೆ ಮತ್ತು ಕಾರ್ಯಗಳನ್ನು ಟಿಪ್ಪಣಿಸಿ.
11. Explain Endocytosis and Exocytosis.
ಎಂಡೋಸೈಟೋಸಿಸ್ ಮತ್ತು ಎಕ್ಸೋಸೈಟೊಸಿಸನ್ನು ವಿವರಿಸಿ.
12. What is Endomembrane system? Explain.
ಎಂಡೋಮೆಂಬರೇನ ಸಿಸ್ಟಮ ಎಂದರೇನು ? ವಿವರಿಸಿ.

III. Answer any three of the following. **(3×4=12)**

ಯಾವುದಾದರೂ 3 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

13. Explain the structure and functions of Nucleus.
ನ್ಯೂಕ್ಲಿಯಸನ ರಚನೆ ಮತ್ತು ಕಾರ್ಯಗಳನ್ನು ವಿವರಿಸಿ.
14. Explain the Cell-cycle.
ಸೆಲ ಸೈಕಲನ್ನು ವಿವರಿಸಿ.
15. Write the Chemical structure of DNA.
ಡಿಎನ್ಎ ದ ರಾಸಾಯನಿಕ ರಚನೆಯನ್ನು ಬರೆಯಿರಿ.
16. Write the types of RNA and their functions.
ಆರ್ಎನ್ಎ ಯ ವಿಧಗಳು ಮತ್ತು ಕಾರ್ಯಗಳ ಕುರಿತು ಬರೆಯಿರಿ.

IV. Answer any (3) of (4) the following. **(3×4=12)**

ಯಾವುದಾದರೂ 3 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

17. Explain Mendel's principle of Independent Assortment.
ಮೆಂಡಲ್ನ ಪ್ರಿನ್ಸಿಪಲ ಆಫ್ ಇಂಡಿಪೆಂಡೆಂಟ ಅಸ್ಸೊರ್ಟಮೆಂಟನ್ನು ವಿವರಿಸಿ.
18. Explain sex-linked inheritance in drosophila.
ಡ್ರೊಸೊಫಿಲಾದಲ್ಲಿಯ ಸೆಕ್ಸ ಆಧಾರಿತ ಅನುವಂಶೀಯತೆಯನ್ನು ವಿವರಿಸಿ.
19. Explain interaction of genes with respect to complementary factors.
ಇಂಟರಾಕ್ಷನ ಆಫ್ ಜೀನ್ಸನ ಕಾಂಪ್ಲಿಮೆಂಟರಿ ಫ್ಯಾಕ್ಟರಗಳ ಕುರಿತು ವಿವರಿಸಿ.
20. Explain cytoplasmic inheritance.
ಸೈಟೋಪ್ಲಾಸ್ಮಿಕ ಅನುವಂಶಿಯತೆಯನ್ನು ವಿವರಿಸಿ.

V. Answer any (3) of (4) of the following. **(3×4=12)**

ಯಾವುದಾದರೂ 3 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

21. Explain Chromosomal aberration with respect to numerical aberrations.
ಕ್ರೋಮೋಸೊಮಗಳಲ್ಲಿನ ಸಂಖ್ಯಾ ನ್ಯೂನ್ಯತೆಯನ್ನು ವಿವರಿಸಿ.

22. Write a note on Pathogenic organisms, viruses, Bacteria and Fungi.
ಸಾಂಕ್ರಾಮಿಕ ಜೀವಿಗಳಾದ ವೈರಸ್, ಬ್ಯಾಕ್ಟೀರಿಯಾ ಮತ್ತು ಫಂಗಸಗಳು ಕುರಿತು ಟಿಪ್ಪಣಿಸಿ.

23. Describe the life cycle of Tape-worm.
ಟೇಪವರ್ಮದ ಜೀವನ ಚಕ್ರವನ್ನು ವಿವರಿಸಿ.

24. Write a note on Karyotyping.
ಕ್ಯಾರಿಯೋಟೈಪ ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

47023/A0230

Reg. No. | | | | | | | | |

I Semester B.Sc. (NEP) Degree Examination, March/April - 2023
CHEMISTRY (DSC)
(Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates :
1. ***All questions are compulsory.***
2. ***Draw neat diagrams and give equations wherever necessary.***

1. Answer any **Six** questions. **(6×2=12)**

a. What is accuracy? Express it as percentage relative error.

b. What is precipitation titration? Give an example.

c. In which region of electromagnetic spectrum are the following series of lines in hydrogen spectrum observed?

i. Balmer series.

ii. Bracket series.

d. What is screening effect?

e. What is hybridisation?

f. Mention the types of organic reactions.

g. Write Vander Waal's equation for n moles of gas.

h. Define mean free path.

2. Answer any **Three** questions. **(3×4=12)**

a. What are errors? Write about indeterminate errors.

b. Explain the titration curve of strong acid and strong base.

c. Explain the theory of metal ion indicators used in EDTA titration.

d. Explain the theory of redox indicators with reference to diphenylamine in the titration of FAS against $K_2Cr_2O_7$.

[P.T.O.

3. Answer any **Three** questions. (3×4=12)

a. Derive an expression for radius of electron in hydrogen atom.

b. What are orbit and orbital? Give the shapes of s and p orbitals.

c. What are quantum numbers? Write their significance.

d. State and explain

i. Aufbau principle.

ii. Hund's rule.

4. Answer any **Three** questions. (3×4=12)

a. Explain the electromeric effect with examples.

b. Write the following with examples.

i. Electrophiles.

ii. Heterolytic fission.

iii. Huckel's rule.

c. Explain the following with example.

i. Wurtz reaction.

ii. Wurtz - fittig reaction.

d. Discuss the mechanism of halogenation of alkane.

5. Answer any **Three** questions. (3×4=12)

a. Define the following and how they are related to vander waal's constants.

i. Critical temperature.

ii. Critical pressure.

iii. Critical volume.

b. Explain the following and how they are related to each other

i. RMS velocity.

ii. Average velocity.

c. State and explain Nernst distribution law. Mention its limitations.

d. Derive an expression for the amount of substance left unextracted after n^{th} extraction with a portion of solvent each time.

19015

Reg. No. | | | | | | | | |

I Semester B.Sc.(NEP) Degree Examination, March/April - 2023

CHEMISTRY (OEC)

Chemistry in Daily Life

(Regular)

Time : 2 Hours **Maximum Marks : 60**

Answer any **six** of the following (6×2=12)

1. a) Name any two non-permitted colourants.
   b) Give the structure of vitamin 'A'.
   c) What are primary and secondary batteries.
   d) Give the acrolein test to identify presence of oils and fats.
   e) How polymers are classified based on polymerisation.
   f) Give any two differences between soaps and detergents.
   g) What are the minerals present in the milk.
   h) How to detect chicory in coffee?

Answer any **three** of the following. (3×4=12)

2. a) Explain role of nitriles, propionates and disulphite in food.
   b) What are food preservatives. Explain any two.
   c) Write a note on pesticide residue in food.
   d) What is adultration? How to detect adultration of water and starch in the milk.

Answer any **three** of the following. (3×4=12)

3. a) What are the sources, deficiency diseases and symptoms of vitamin-B and vitamin-D.
   b) Write a note on
      i) Rinse aid
      ii) Dish washer
   c) Explain how soaps are prepared. What are hard and Soft soaps?
   d) What is rancidity? How can it be prevented?

[P.T.O.

Answer any three of the following. (3×4=12)

4. a) Give the principle of fuel cells. Explain its applications.

b) What are environmental friendly polymers? Explain.

c) Write a note on "Solar energy".

d) What are the problems of plastic waste? How to manage them?

Answer any **three** of the following. (3×4=12)

5. a) How to analyse

i) Chloral hydrate in toddy.

ii) Methyl alcohol in alcoholic beverages.

b) What is the role of Dulcin and Sodium cyclamate in food.

c) What are the sources of fat soluble vitamins.

d) Write a note on action of soap on dirt.

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No. of Printed Pages : 7

Booklet Serial No. 072119

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I Semester B.Sc./B.Com/BCA Degree Examination, March/April - 2023

COMPUTER SCIENCE

Digital Fluency (SEC)

(Regular)

Time : 1 Hour **Max. Marks : 25**

Instructions to Candidates:

1) **Answer all questions**
2) **All questions are MCQ.**
3) **Each question carries one mark.**

1. Which of the following is the smallest unit of data in a computer?

A) Byte B) Bit

C) Nibble D) Kilobyte

2. The basic architecture of computer was developed by

A) Charles Babbage B) Blaise Pascal

C) John Von Neumann D) Garden Moore

3. Following is the computer program that would convert an assembly language to the machine language.

A) Interpreter B) Compiler

C) Disassembler D) Assembler

4. Which generation is based on VLSI technology?

A) First Generation B) Second Generation

C) Third Generation D) Fourth Generation

[P.T.O.

5. What is true about operating system?

A) An operating system is a collection of software.

B) An operating system is a vital component of the system software.

C) An operating system is an interface between a user and computer hardware.

D) All of the above.

6. Which of the following is not a kind of system software?

A) Operating system B) Device Drivers

C) Microsoft Word D) BIOS software.

7. Which of the following is an example of open source operating system?

A) Linux B) Windows

C) Ubuntu D) Both (a) and (c)

8. Which of the following computer memory is fastest?

A) Register B) ROM

C) RAM D) Hard Disk

9. Data in _____ bytes size is called Big data.

A) Tera B) Giga

C) Peta D) Meta

10. PaaS stands for

A) Parallel as a service B) Platform as a Service

C) Platforms as a service D) Platform as a software.

11. In MS word 2007, how many ways a text can be aligned?

A) 2 ways B) 5 ways

C) 3 ways D) 4 ways

12. Shortcut key to open a 'New Blank Document' in Ms- Word.

A) CTRL+N B) CTRL+O

C) CTRL+B D) CTRL+M.

13. Word wrap means

A) Aligning text with the right margin

B) Inserting spaces in between words

C) Automatically moves text to the next line when necessary

D) Allows user to type over text.

14. Which bar in Excel show the used formula of selected active cell?

A) Menu bar B) Scroll bar

C) Task bar D) Formula bar

15. Following is a powerful tool used to create and format spreadsheets.

A) Adobe Photoshop B) Microsoft powerpoint

C) Microsoft Excel D) Microsoft word

16. Which Excel function displays row data in column or column data in row?

A) Row to column B) Column to Row

C) Transpose D) Switch

17. Which of the following option is used to see all slides at once?

A) Slide view B) Slide sorter view

C) All slide view D) None of the above

18. Google Docs is similar to which of the following application?

A) Microsoft outlook B) Microsoft word

C) Text Document D) Microsoft Excel

19. _____ is a cloud based storage service which is developed by Google.

A) Google Docs B) Google Drive

C) Goolge Chrome D) Google Slides

20. Which of the following is not a virtual meeting application?

A) Zoom B) Google meet

C) Webex D) Kahoot

21. Which is the e-Learning application launched by Government of India?

A) Byju's
B) Swayam
C) Udemy
D) None of the above

22. MOOC Stands for

A) Master Open Online Courses
B) Massive Open Offline Class
C) Massive Open Online Courses
D) Master Open Online Class

23. Which E-commerce model focuses on Consumers dealing with one another?

A) Business to Business
B) Business to consumer
C) Consumer to Consumer
D) Consumer to Business.

24. Which of the following is not a E-Commerce website?

A) Amazon
B) Google
C) Flipkart
D) Myntra

25. Expand HTTP.

A) Hyper Text Test Protocol
B) Hyper Text Transfer Protocol
C) Hyper Text Transmit Protocol
D) Hyper Text Test Provision.

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Reg. No. | | | | | | | | | |

I Semester (All Degree Courses) Degree Examination, March/April - 2023

COMPUTER SCIENCE

Digital Fluency (SEC-Theory)

(Repeater)

Time : 1 Hour Max. Marks : 25

Instructions to Candidates: Answer all Sections.

SECTION - A

I. Answer all five questions. Select the most appropriate answer from the following. (5×1=5)

1. Expansion of IIOT.
   A) Industrial Internet of Things.
   B) Information Internet of Things.
   C) Interpreter Internet of Things.
   D) None of the above.

2. Neural Networks is the old name for.
   A) Data Learning B) Machine Learning
   C) Deep Learning D) Network Learning.

3. Big Data Tools and Technologies.
   A) NOSQL B) Apache Hadoop
   C) Apache Hive D) All of the above

4. Which is not a google cloud platform Service?
   A) Big Data B) Networking
   C) IOT D) None

5. DLP full form.
   A) Data Leakage Prevention. B) Data Loss Prevention
   C) Data Load Prevention D) None.

[P.T.O.

SECTION - B

II. Answer any Five questions. Each carries 2 marks. **(5×2=10)**

6. Define AI. Give its applications.
7. Who are the users of Machine Learning?
8. Explain the Advantages of Database.
9. Differentiate between IOT and IIOT.
10. List the advantages of cloud computing.
11. Mention the types of Cyber Security.
12. Give the importance of Communication skills.
13. Mention the steps in creative problem solving.

SECTION - C

III. Answer any Two questions. Each carries 5 marks. **(2×5=10)**

14. Fill in the blanks.
    a) Deep Learning is the subset of _____
    b) Technology used in the process of automatically translate content from one language to another language without human input _____.
    c) Full form of SaaS in cloud is _____
    d) Process of working well with one or more people to accomplish a common goal is called _____
    e) Process of turning ideas into things _____
15. Give True or False.
    a) AI intelligence is demonstrated by machines _____ (True/Flase)
    b) Data are individual facts, statistics, or items of information, often numeric _____ (True/Flase)
    c) Cloud Computing networks are designed to support only public cloud _____. (True/False).

d) Communication is defined as transferring information to produce greater understanding _____ (Ture/False)

e) Teamwork will not increase the quality and quantity of output _____ (True/False)

16. Match the following.

a)	AI	i)	Antivirus
b)	IoT	ii)	Healthcare
c)	Cyber Security	iii)	Self-Driving cars
d)	Big Data	iv)	AWS
e)	Cloud	v)	Robots

47024/A0240

Reg. No. | | | | | | | | | |

I Semester B.Sc. 6. (NEP) Degree Examination, April - 2023

COMPUTER SCIENCE (DSC)

Computer Fundamentals and Programming in C

(Regular/Repeater)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates : *1. Answer **all** questions.*
2. Draw a neat diagram wherever necessary.

1. Answer any **six** questions. Each carries **two** marks. **(6×2=12)**
   a. Differentiate between interpreter and compiler.
   b. List any four features of C language.
   c. Define token. Mention different C tokens.
   d. What is relational operator?
   e. How two dimensional arrays are declared?
   f. What is the use of isalpha ( ) and isnumeric ( ) function?
   g. How pointers are declared and initialized?
   h. What is union?
2. Answer any **Three** questions. Each question carries **four** marks. **(3×4=12)**
   a. Explain different characteristics of computer.
   b. Convert $(143)_{10}$ to binary and octal number.
   c. Draw a flowchart to find largest among 3 numbers.
   d. Explain the structure of C program.
3. Answer any **Three** questions. Each carries **four** marks. **(3×4=12)**
   a. With syntax and example explain formatted input/output functions of C.
   b. Explain Arithmetic and logical operators.
   c. Write a note on different data types of C.
   d. What is type conversion? Explain with examples.

[P.T.O.

4. Answer any **Three** questions. Each carries **four** marks. (3×4=12)

   a. With syntax explain else - if - ladder statement.

   b. Write a note on entry and exit controlled loops.

   c. With syntax explain any four string handling function.

   d. Write a C program to check given number is palindrome or no.

5. Answer any **Three** questions. Each carries **four** marks. (3×4=12)

   a. Write a C program to demonstrate pointers in C.

   b. Explain function without arguments but return value.

   c. Explain how structures are declared and initialized.

   d. Explain what are the advantages and disadvantages of pointers.

19016

Reg. No. | | | | | | | | |

I Semester (All UG Courses) (NEP) Degree Examination, March/April - 2023

COMPUTER SCIENCE

C-Programming Concepts (Open Elective Course)

(Regular/Repeater)

Time : 3 Hours **Maximum Marks : 60**

Instructions to Candidates :

1) Answer all questions.
2) Draw neat diagrams wherever necessary.

Answer any **six** of the following. **(6×2=12)**

1. a) What is token?

b) List the rules used for declaring identifiers.

c) What are increment and decrement operators?

d) With syntax explain printf( ) function.

e) What is entry controlled loop?

f) How string is declared and Initialized?

g) What is the need of user defined function?

h) Write the syntax for user defined function.

Answer any **three** questions. Each carries **four** marks. **(3×4=12)**

2. a) Explain the structure of C program.

b) Explain any 5 features of C.

c) How variables are declared and initialized? Explain.

d) Write a note on history of C language.

Answer any **three** questions. Each carries **four** marks. **(3×4=12)**

3. a) Explain formatted input/output functions.

b) Explain any four operators used in C.

c) With syntax explain if-else and simple if statement.

d) Write a note on break and continue statement.

P.T.O.

Answer any **three** questions. Each carries **four** marks. (3×4=12)

4. a) Explain while and do while loop with syntax.
   b) How one dimensional arrays are declared and intialized? Explain.
   c) With syntax explain any four string handling functions.
   d) Write a C program to find sum of n integers using for loop.

Answer any **three** questions. Each carries **four** marks. (3×4=12)

5. a) Explain function with arguments but without return value.
   b) Explain different components of a function.
   c) Write a C program to demonstrate how user defined functions are declared and called.
   d) Explain call by value parameter passing mechanism.

44001/44601/45001/A0010/45201

Reg. No. | | | | | | | | |

I Semester B.Sc. (CBCS) Degree Examination, March/April - 2023

ENGLISH BASIC

(Repeater)

Time : 3 Hours **Maximum Marks : 80**

Texts : English Gems.

I. Answer the following questions in a word, a phrase or sentence each. **(10×1=10)**

1. What is Johnsy's illness?
2. Who were the members of the fourth summit party?
3. What is ZBNF?
4. When was the first farming invented?
5. Who is the rival of chaplin?
6. Who is the author of the poem 'A prayer For My Daughter'?
7. How many roads diverged in a yellow wood?
8. Why does the poet face discrimination in the poem 'still I Rise'?
9. What is disgrace in the poem "How did you die"?
10. When according to the poet should we come up with a smiling face?

II. Explain the following statements with reference to the context selecting one from prose and one from poetry. **(2×5=10)**

1. "What have old ivy leaves to do with your getting well"?
2. 'Could we search for cylinders?'
3. May she be granted beauty and yet not Beauty to make a strangers eye distraught,.
4. I took one less traveled by, And that has made all the difference.

[P.T.O.

III. a) Explain the role of will power in 'The Last Leaf'. (1×10=10)

(OR)

b) How is ZBNF different from other modern farming systems?

IV. a) Critically appreciate the poem 'A Prayer for My Daughter'. (1×10=10)

(OR)

b) How does the poet challenge her oppressors in the poem 'Still I Rise'?

V. Write short note on any **two** of the following choosing one from prose and one from poetry. (2×5=10)

1. The last phase of Ahluwalia's journey to the summit.
2. Jackie coogan.
3. The symbolism in the poem 'The Road not Taken'.
4. Motivation in 'How did you die'?

VI. A. Use the following words in sentences as directed. (5×1=5)

1. 'Brave' as an adjective.
2. "Water' as a verb.
3. 'Yesterday' as an adverb.
4. 'Perform' as a noun.
5. 'Blow' as a verb.

B. Fill in the blanks with suitable articles. (5×1=5)

1. She gave me _____ excellent offer.
2. The Ganga is _____ holy river.
3. _____ apple a day keeps the doctor away.
4. His father is _____ university professor.
5. She goes to temple in _____ morning.

C. Fill in the blanks with suitable prepositions. (5×1=5)

1. Ravi got the train _____6, O′ Clock.
2. Do not cry _____ spilt milk.
3. She is fond _____ music.
4. I prefer coffee _____ tea.
5. Raju lives _____ Bangalore.

VII. A. Give the synonyms of the following words (5×1=5)

1. Glitter.
2. Tiny.
3. Commana.
4. Answer
5. Brave.

B. Give the antonyms of the following words. (5×1=5)

1. Complex.
2. Full.
3. Passive.
4. Problem.
5. Shame.

C. Draft a copy of self-introduction highlighting your academic achievements. (1×5=5)

19002

Reg. No. | | | | | | | | | |

I Semester (All UG Courses) (NEP) Degree Examination, March/April - 2023

Functional English Grammar and Study Skills

(Open Elective Course)

(Regular)

Time : 3 Hours **Maximum Marks : 60**

I. Answer the following questions in a word, a phrase or a sentence each. **(10×2=20)**

1. What is grammar?
2. What is spoken English?
3. What is phrase and give an example.
4. Give an example of SVOC.
5. What is Adverbial phrase?
6. What is a paragraph?
7. What is the meaning of reading?
8. What is the main purpose of reading?
9. Give an example of a clause in a sentence.
10. What is revising?

II. Write brief notes on any **Four** of the following. **(4×5=20)**

1. Writing skills
2. Types of Reading
3. Finalizing a draft
4. Functions of clauses
5. Basic sentence patterns in English
6. Tenses

[P.T.O.

III. Read the following text and complete it using words given in bracket. (1×10=10)

An _____ is some one who has an _____ and who works to _____ a product or service that _____ will buy, as well as an organization to support that effort. An _____ taken on most of the _____ and _____ for their new business and is _____ seen as a _____ or _____.

(innovator, visionary, often, risk, initiative, entrepreneur, people, create, idea, entrepreneur)

IV. A) Draft a dialogue between You and SBI manager for opening an SB account. (1×5=5)

B) Expand the idea inherent in the following proverb/precept/saying (1×5=5)

a) 'Work is worship.'

b) 'Service Before self.'

19053/A5530

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I Semester All UG Courses (NEP) Degree Examination, March/April - 2023

KANNADA (Open Elective)

ಕನ್ನಡ ಸಣ್ಣ ಕಥೆಗಳು

(Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates:

ಭಾಷೆ ಮತ್ತು ಬರಹದ ಶುದ್ಧಿಗೆ ಗಮನ ಕೊಡಲಾಗುವುದು.

I. ಬೇಕಾದ **ಮೂರಕ್ಕೆ** ಉತ್ತರಿಸಿರಿ. **(3×10=30)**

a) 'ಜೋಗತಿಕಲ್ಲು' ಕಥೆಯು ಹೆಣ್ಣಿನ ತ್ಯಾಗದ ಪ್ರತೀಕವಾಗಿದೆ ವಿವರಿಸಿರಿ.

b) 'ಪ್ರಕೃತಿ' ಕಥೆಯ ವಸ್ತುವನ್ನು ಕುರಿತು ಚರ್ಚಿಸಿರಿ.

c) 'ಮಾಯಾಮೃಗ' ಕಥೆಯಲ್ಲಿ ಮಾನವ ಭೀತಿಯೇ ಭಯಕ್ಕೆ ಕಾರಣವಾಗಿದೆ ಎಂಬುದನ್ನು ವಿವರಿಸಿರಿ.

d) 'ಕಾಡಜ್ಜ' ಕಥೆಯಲ್ಲಿ ಮೂಡಿಬಂದ ಭಾಷೆಯ ವೈಶಿಷ್ಟ್ಯ ಕುರಿತು ಚರ್ಚಿಸಿರಿ.

e) 'ಮಣ್ಣು ಸೇರಿತು ಬೀಜ' ಕಥೆಯಲ್ಲಿ ಗ್ರಾಮೀಣ ಜನರ ಮಾನವ ಸಂಬಂಧ ವ್ಯಕ್ತವಾದ ರೀತಿಯನ್ನು ವಿವರಿಸಿರಿ.

II. ಬೇಕಾದ **ಮೂರಕ್ಕೆ** ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ. **(3×5=15)**

a) ಸಾ.ರಾ. ಅಬೂಬಕರ

b) ದತ್ತ

c) ಅಣ್ಣಿಮ್ಮ

d) ಅಳಬೇಡ ಕಂದ ಕಥೆಯ ವಸ್ತು

e) ಕರುಣಾಕರ

III. **ಒಂದೇ** ವಾಕ್ಯದಲ್ಲಿ ಉತ್ತರಿಸಿರಿ. **(15×1=15)**

a) ಶಕುಂತಲೆಯ ಮಗನ ಹೆಸರೇನು?

b) ಕಾಡನಾಯಕನ ಮಗನ ಹೆಸರೇನು?

[P.T.O.

c) ಪ್ರಕೃತಿ ಕಥೆಯ ನಾಯಕ ಯಾರು?

d) ಪೂರ್ಣಚಂದ್ರ ತೇಜಸ್ವಿಯವರ ಕಾವ್ಯನಾಮವೇನು?

e) ಜಮಾ ಅಲ್ ಸಮಿತಿಯ ಅಧ್ಯಕ್ಷ ಯಾರು?

f) "ಒಂದು ಹುಡುಗನಿಗೆ ಬಿದ್ದ ಕನಸು' ಕಥೆಯನ್ನು ಯಾವ ಕೃತಿಯಿಂದ ಆಯ್ದುಕೊಳ್ಳಲಾಗಿದೆ?

g) 'ಪ್ರತಿಮೆಗಳು' ಇದು ಯಾರ ಕಥಾ ಸಂಕಲನವಾಗಿದೆ?

h) ತುಂಬಾಡಿ ರಾಮಯ್ಯನವರು ಯಾವ ಇಲಾಖೆಯಲ್ಲಿ ಸೇವೆ ಸಲ್ಲಿಸಿದ್ದರು?

i) ಚೆನ್ನಣ್ಣ ವಾಲಿಕಾರರು ಯಾವ ವಿಶ್ವವಿದ್ಯಾಲಯದಲ್ಲಿ ಸೇವೆ ಸಲ್ಲಿಸಿದ್ದಾರೆ?

j) ಮಾಸ್ತಿಯವರ ಯಾವ ಕಥೆಯಲ್ಲಿ ಸ್ತ್ರೀ ಸಂವೇದನೆ ಇದೆ?

k) ಕಣ್ವರು ಯಾರು?

l) 'ಅಳಬೇಡ' ಕಂದ ಕಥೆಯ ಲೇಖಕರು ಯಾರು?

m) 'ಮಣ್ಣು ಸೇರಿತು ಬೀಜ' ಇದು ಯಾರ ಕಥಾ ಸಂಕಲನವಾಗಿದೆ?

n) ಎಚ್. ನಾಗವೇಣಿಯವರ ಕಥೆಯ ಹೆಸರೇನು?

o) 'ಷಾ'ಗೆ ಸ್ಮಶಾನದಲ್ಲಿ ಕಂಡ ಪ್ರಾಣಿ ಯಾವುದು?

47030/A0300

Reg. No. | | | | | | | | |

I Semester B.Sc. 6. Degree Examination, March/April - 2023

MATHEMATICS (DSC)

Algebra - I and Calculus - I

Paper : 21BSCICIMATIL

(Repeater/Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates : *Answer all questions.*

1. Answer any **six** of the following. **(6×2=12)**

a. Define the equivalent matrices.

b. Find the rank of the matrix $\begin{bmatrix} 1 & 1 & -1 \\ 2 & -3 & 4 \\ 3 & -2 & 3 \end{bmatrix}$.

c. For the curve $r = ae^{\theta \cot \alpha}$ then show that $\phi = \alpha$.

d. Find $\frac{ds}{dx}$ for the curve $y^2 = 4ax$.

e. State Rolles theorem.

f. Evaluate $\lim_{x \to 0}\left[\frac{x - \sin x}{x^3}\right]$.

g. Find the n^{th} derivative of $\log(x^2 + 3x + 2)$.

h. If $y = \sin^2 x$ then find y_n.

2. Answer any **three** of the following. **(3×4=12)**

a. Verify Cayley - Hamilton theorem for the matrix $\begin{bmatrix} 5 & 3 \\ 4 & 2 \end{bmatrix}$ and find its inverse.

b. Prove that rank of a matrix is unaltered by multiplying the elements of a row by non-zero scalar.

[P.T.O.

c. Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 1 & 2 \\ 1 & 3 & 2 & 2 \\ 2 & 4 & 3 & 4 \\ 3 & 7 & 4 & 6 \end{bmatrix}$ by reducing it to echelon form.

d. Test the consistency of the system of equations, $x+y+z=9$; $2x+5y+7z=52$, $2x+y-z=0$ and solve.

3. Answer any **three** of the following. **(3×4=12)**

a. Find angle of intersection of the curves $r=a\cos\theta$ and $r=a(1-\cos\theta)$.

b. For the plane curve, prove that $\frac{1}{p^2}=\frac{1}{r^2}+\frac{1}{r^4}\left(\frac{dr}{d\theta}\right)^2$.

c. Derive the radius of curvature in cartesian form.

d. Find the equation of circle of curvature for the curve $xy(x+y)=2$ at $(1,1)$.

4. Answer any **three** of the following. **(3×4=12)**

a. If f(x) is continuous in [a,b] then show that it attains its bounds at least in that interval.

b. If $\lim_{x\to a} f(x)=L$ and $\lim_{x\to a} g(x)=M$ then prove that $\lim_{x\to a}[f(x)-g(x)]=L-M$.

c. State and prove Cauchy's mean value theorem.

d. Find the Maclaurins series expansion for the function $\log(\sec x)$ up to 5^{th} degree terms.

5. Answer any **three** of the following. **(3×4=12)**

a. If $y=\cos 2x.\cos 4x.\cos 6x$ find y_n.

b. Find the n^{th} derivative of $e^{ax}.\cos(bx+c)$.

c. State and prove Leibnitz's theorem for the n^{th} derivative of product of two functions.

d. If $y=(x^2-1)^n$ then prove that $(x^2-1)y_{n+2}+2xy_{n+1}-n(n+1)y_n=0$.

19023/A5230

Reg. No. | | | | | | | | |

I Semester B.Sc. 6 (NEP) Degree Examination, March/April - 2023

MATHEMATICS - I

Science Streams Students (OEC)

Paper : 21BSC101MAT1

(Repeater)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates :

1) Answer any **six** questions from Q.No.1.
2) Answer any **four** questions from Q.No 2,3,4.

1. Answer any **SIX** of the following **(6×2=12)**

a) Define rank of the matrix and find the rank of $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

b) Define elementary row transformation of a matrix.

c) Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$

d) Discuss the continuity of $f(x) = \begin{cases} 5-x, & x \le 2 \\ 2x-1, & x > 2 \end{cases}$ *at* $x = 2$

e) State Rolle's theorem.

f) Evaluate $\lim_{x \to 0} \left[\frac{e^x + e^{-x} - 2}{x^2} \right]$.

g) Find the n^{th} derivative of $\sin^2 x$.

h) If $y = \sin(ax + b)$ then y_n.

i) Find the n^{th} derivative of $e^x . x$.

[P.T.O.

2. Answer any **FOUR** of the following: **(4×4=16)**

a) Prove that rank of a matrix is equal to the rank of it's transpose.

b) Find the rank of the matrix $\begin{bmatrix} 1 & 0 & 2 & -2 \\ 2 & -1 & 0 & -1 \\ 1 & 0 & 2 & -1 \\ 4 & -1 & 3 & -1 \end{bmatrix}$.

c) Test the consistency and solve the following system of equations

$2x + 3y - 4z = -2$
$x - y + 3z = 4$
$3x + 2y - 2 = -5$

d) State cayley-Hamilton theorem and using this find the inverse of $\begin{bmatrix} 2 & -1 \\ -1 & 2 \end{bmatrix}$.

e) Show that every square matrix can be expressed uniquely as the sum of a symmetric matrix and skw symmetric matrix.

3. Answer any **FOUR** of the following: **(4×4=16)**

a) If $\lim_{x\to a} f(x) = l$ *and* $\lim_{x\to a} g(x) = m$. Then prove that $\lim_{x\to a}[f(x) - g(x)] = l - m$

b) state and prove Lagrange's mean value theorem.

c) Expand $\log(1+x)$ by Maclaurin's theorem upto the terms containing x^5.

d) Discuss the continuity of $f(x) = \begin{cases} 3x-2 & for \quad x \le 1 \\ 2x-1 & for \quad x > 1 \end{cases}$ at $x = 1$

e) State and prove intermediate value theorem.

4. Answer any **FOUR** of the following: **(4×4=16)**

a) Find the nth derivative of $e^{ax}\sin(bx+c)$.

b) If $y = \sin 3x.\sin 2x.\sin x$ then find the nth derivative of y.

c) State and prove leibnitz's theorem for the nth derivative of the product of two functions.

d) If $y = (\sin^{-1} x)^2$, then prove that $(1-x^2)y_{n+2} - (2n+1)xy_{n+1} - n^2 y_n = 0$.

e) Find the nth derivative of $e^x.\sin 3x.\cos x$

42134/A340

Reg. No. | | | | | | | | |

I Semester B.Sc. 4 Degree Examination, April - 2023

MATHEMATICS (OPTIONAL)

Algebra and Trigonometry

Paper : II

(Repeaters)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates :

1) Answer all questions.
2) Question paper contains three parts namely A,B,C.

Part - A

Answer any **Ten** of the following. **(10×2=20)**

1. a) Define skew-symmetric determinant and give an example.

b) Prove that $\begin{vmatrix} 1 & 1 & 1 & 1 \\ 1 & 1+x & 1 & 1 \\ 1 & 1 & 1+y & 1 \\ 1 & 1 & 1 & 1+z \end{vmatrix} = xyz$

c) Define symmetric and skew symmetric matries.

d) Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 1 & -1 & 2 \end{bmatrix}$

e) Define countable set and give an example.

f) Define partition of a set.

g) Show that the set of even integer is countable.

h) Find the remainder when $x^3 - 7x^2 + 4x + 9$ is divided by x-2.

i) If α, β *and* γ are roots of an equation $x^3 - 3x + 5 = 0$ then find $\sum \alpha^2$.

j) Express $\cos(x+iy)$ in the form of A+iB

k) Evaluate $\log(\sqrt{3}-i)$

l) Prove that $\log\left\{\frac{a+ib}{a-ib}\right\} = 2i\tan^{-1}\left(\frac{b}{a}\right)$.

Part - B

Answer any **Four** of the following (4×5=20)

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

3. Find the rank of matrix $\begin{bmatrix} 1 & 2 & 0 & -1 \\ 3 & 4 & 1 & 2 \\ -2 & 3 & 2 & 5 \end{bmatrix}$ by reducing it to normal form.

4. Prove that the rank of matrix does not alter by interchanging any two rows of a matrix.

5. Prove that N×N is countable.

6. Find the roots of the equation $x^4+x^3+34x^2+36x-72=0$ by synthetic division.

7. Expand $\cos^6\theta$ in terms of multiple of θ.

Part - C

Answer any four of the following (4×10=40)

8. a) If Δ is a determinant of order 4 and Δ' is its reciprocal determinant then prove that $\Delta^1 = \Delta^3$

b) Prove that $\begin{vmatrix} 1+a & 1 & 1 & 1 \\ 1 & 1+b & 1 & 1 \\ 1 & 1 & 1+c & 1 \\ 1 & 1 & 1 & 1+d \end{vmatrix} = abcd\left(1+\frac{1}{a}+\frac{1}{b}+\frac{1}{c}+\frac{1}{d}\right)$

9. a) Find the inverse of $\begin{bmatrix} 1 & 2 & 1 \\ 3 & 2 & 3 \\ 1 & 1 & 2 \end{bmatrix}$ by elementary transformation.

b) Show that the system of equations

$x+2y+3z=14, 3x+y+2z=11, 2x+3y+z=11$ is consistent and solve.

10. a) State and prove De-Morgan's laws for union and intersection of indexed family of sets.

b) Prove that the unit interval $[0,1]$ is uncountable.

11. a) Prove that every polynomial equation

$a_0x^n+a_1x^{n-1}+a_2x^{n-2}+.....+a_{n-1}x+a_n=0$, has exactly 'n' roots.

b) Solve $x^4-4x^3+4x^2+8x-2=0$, given that one root being 1+i.

12. a) Find the sum of the series $\sin\alpha+\sin(\alpha+\beta)+\sin(\alpha+2\beta)+....n$ terms.

b) If $\sin(A+iB)=x+iy$ then prove that

i) $\frac{x^2}{\cosh^2 B}+\frac{y^2}{\sinh^2 B}=1$

ii) $\frac{x^2}{\sin^2 A}-\frac{y^2}{\cos^2 A}=1$.

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Reg. No. | | | | | | | | |

I Semester B.Sc. 6 (NEP) Degree Examination, March/April - 2023

MATHEMATICS - I

Science Streams Students (OEC)

Paper : 21BSC101MAT1

(Repeater)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates :

1) Answer any **six** questions from Q.No.1.
2) Answer any **four** questions from Q.No 2,3,4.

1. Answer any **SIX** of the following **(6×2=12)**

a) Define rank of the matrix and find the rank of $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

b) Define elementary row transformation of a matrix.

c) Find the rank of the matrix $\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}$

d) Discuss the continuity of $f(x) = \begin{cases} 5-x, & x \le 2 \\ 2x-1, & x > 2 \end{cases}$ at $x = 2$

e) State Rolle's theorem.

f) Evaluate $\lim_{x \to 0} \left[\frac{e^x + e^{-x} - 2}{x^2} \right]$.

g) Find the n^{th} derivative of $\sin^2 x$.

h) If $y = \sin(ax + b)$ then y_n.

i) Find the n^{th} derivative of $e^x . x$.

[P.T.O.

2. Answer any **FOUR** of the following: **(4×4=16)**

a) Prove that rank of a matrix is equal to the rank of it's transpose.

b) Find the rank of the matrix $\begin{bmatrix} 1 & 0 & 2 & -2 \\ 2 & -1 & 0 & -1 \\ 1 & 0 & 2 & -1 \\ 4 & -1 & 3 & -1 \end{bmatrix}$.

c) Test the consistency and solve the following system of equations

$2x + 3y - 4z = -2$

$x - y + 3z = 4$

$3x + 2y - 2 = -5$

d) State cayley-Hamilton theorem and using this find the inverse of $\begin{bmatrix} 2 & -1 \\ -1 & 2 \end{bmatrix}$.

e) Show that every square matrix can be expressed uniquely as the sum of a symmetric matrix and skw symmetric matrix.

3. Answer any **FOUR** of the following: **(4×4=16)**

a) If $\lim_{x \to a} f(x) = l$ *and* $\lim_{x \to a} g(x) = m$. Then prove that $\lim_{x \to a}[f(x) - g(x)] = l - m$

b) state and prove Lagrange's mean value theorem.

c) Expand $\log(1+x)$ by Maclaurin's theorem upto the terms containing x^5.

d) Discuss the continuity of $f(x) = \begin{cases} 3x-2 & for \quad x \le 1 \\ 2x-1 & for \quad x > 1 \end{cases}$ at $x = 1$

e) State and prove intermediate value theorem.

4. Answer any **FOUR** of the following: **(4×4=16)**

a) Find the nth derivative of $e^{ax} \sin(bx+c)$.

b) If $y = \sin 3x . \sin 2x . \sin x$ then find the nth derivative of y.

c) State and prove leibnitz's theorem for the nth derivative of the product of two functions.

d) If $y = (\sin^{-1} x)^2$, then prove that $(1-x^2)y_{n+2} - (2n+1)xy_{n+1} - n^2 y_n = 0$.

e) Find the nth derivative of $e^x . \sin 3x . \cos x$

44035/A0350

Reg. No. | | | | | | | | | |

I Semester B.Sc.5 (CBCS) Degree Examination, April - 2023

PHYSICS (Optional)

(Repeaters)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates :

i) Calculators can be used to solve problems.

ii) Write intermediate steps.

1. Answer any **TEN** questions of the following. **(10×2=20)**

i. Give any two distinction between elastic and inelastic collisions.

ii. What is torque?

iii. Write expression for angular momentum in terms of moment of inertia and angular velocity.

iv. Explain the terms GPS and NavIC.

v. State perpendicular axis theorem.

vi. A bar pendulum of mass 1.2 kg and moment of inertia about center of gravity is 75×10^{-3}kgm^2. Find radius of gravitation.

vii. Define Poisson's ratio.

viii. What is torsional pendulum?

ix. Write Expression for bending moment and explain the terms.

x. Write Relativistic formula for mass of the body.

xi. What is the objective of **Michelson** Morley experiment?

xii. What do you mean by rest mass of an electron?

2. Answer the questions 'a and b' OR 'c and d'. **(4×15=60)**

a. Two metal balls of different masses have same momentum. Which one has greater kinetic energy. **(5)**

b. Derive expression for final velocities in case of inelastic collision in

i. Laboratory frame of reference.

ii. Center of mass frame of reference. **(10)**

(OR)

c. The ball of mass 0.1 kg collides elastically with the ball of unknown mass at rest. If 0.1 kg ball rebounce with half its original speed, what is the mass of other ball. **(5)**

d. State the principle of rocket motion, derive expression for single stage rocket. **(10)**

3. Answer the questions 'a and b' OR 'c and d'.

a. Determine escape velocity on the moon. Mass of moon is 7.35×10^{22} kg and radius of moon is 1.5×10^{6}m. **(5)**

[P.T.O.

b. State, explain and prove Kepler's second law of planetary motion. **(10)**

(OR)

c. A rectangular plate of mass 0.7 kg has length of 0.25 m and breadth of 0.018 m find its moment of inertia about an axis passing through center of gravity, and perpendicular to its plane. **(5)**

d. Give the theory of compound pendulum. **(10)**

4 Answer the questions 'a and b' OR 'c and d'.

a. The ratio of radii of two wires of same materials is 2:1. If these wires stretched by equal force, Find the ratio of stresses produced in them. **(5)**

b. Derive relation between elastic constants. **(10)**

(OR)

c. A uniform metal ball of length 1.2 m rests on two knife edges at its ends. When it is loaded at the center with 3 kg, the depression produced is 0.015 m, calculate the critical load. **(5)**

d. Give the theory of cantilever and hence obtain expression for depression produced at the loaded end. **(10)**

5. Answer the questions 'a and b' OR 'c and d'.

a. What should be speed of rocket so that the observer majors its length as $3/4^{th}$ of its length at rest. **(5)**

b. State postulates of special theory of relativity. Derive Lorentz's transformation equation. **(10)**

(OR)

c. Two space ships 'A' and 'B' are moving in opposite direction each with a speed of 0.9 C. Find the relative velocity of B. With respective to A. **(5)**

d. Derive Einstein's mass - energy relation. **(10)**

47032/A0320

Reg. No. | | | | | | | | |

I Semester B.Sc. 6 (NEP) Degree Examination, April/May - 2023

PHYSICS

Mechanics and Properties of Matter

(Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates :

1) Calculators are allowed.

2) Show intermediate steps.

Answer any **SIX** questions. **(6×2=12)**

1. a) Write two differences between fundamental and derived units.

b) What are scalar and vector fields?

c) Write two differences between elastic and inelastic collisions.

d) State parallel axes theorem.

e) Define stress and strain.

f) What is meant by binding energy of satellite.

g) Define angle of contract in case of a liquid drop placed on a plane horizontal surface.

h) Mention two differences between streamline and turbulent flow.

Answer 'a and b' or 'c and d'.

2. a) Define gradient, divergence and curl of a vector. Mention their physical significances. **(8)**

b) A sand bag of mass 10kg is suspended with 3m long weightless string. A bullet of mass 0.2kg is fired with a speed of 20m/s into the bag and stays in the bag. Calculate speed acquired by the bag. **(4)**

(OR)

c) What is principle of rocket motion. Derive an equation of motion for a single stage rocket. **(8)**

d) A steel ball of mass 1kg is moving with velocity of 12m/s. It strikes 4 kg is block at rest. The collision is elastic. Find the speed of the ball and speed of the block after collision. **(4)**

[P.T.O.

Answer 'a and b' or 'c and d'.

3. a) Derive an expression for moment of inertia of rectangular lamina about an axis through its centre and parallel to one side. (8)

b) A circular disc of mass 5kg and radius 0.38m rotates about its axis passing through centre and perpendicular to its plane. Calculate its moment of inertia. (4)

(OR)

c) Derive Kepler's second and third laws of planetary motion. (8)

d) Determine escape velocity on the moon. Mass of moon is 7.35×10^{22}kg and radius is 1.5×10^{6}m. (4)

Answer 'a and b' or 'c and d'.

4. a) Derive an expression for work done per unit volume in deforming the body. (8)

b) A wire 10m long has a cross sectional area of $1.25\times10^{-4}m^2$. It is subjected to a load of 5 kg if Young's modulus of the material is $4\times10^{10}N/M^2$. Calculate the elongation of the wire. (4)

(OR)

c) Derive an expression for time period of torsional pendulum. (8)

d) The ratio of radii of two long wires of same material is 2:1. If these wires are stretched by equal force. Find the ratio of stresses produced in them. (4)

Answer 'a and b' or 'c and d'.

5. a) Derive an expression for capillary rise in case of liquid in capillary tube. (8)

b) Find the excess pressure inside a liquid drop of radius 2×10^{-2}m given that surface tension of water is 0.073 N/m. (4)

(OR)

c) State, explain and derive Stoke's law of viscosity. (8)

d) Find terminal velocity of metal ball of radius 1×10^{-3}m. Falling through liquid. (4)

Given: Density of liquid =1200 kg/m^3.

Density of material of ball = 7800kg/m^3.

Coefficient of viscosity of liquid = 1.5NS/m^2 g=9.8m/s^2.

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Reg. No. | | | | | | | | | |

I Semester B.Sc. 5 (NEP) Degree Examination, April/May - 2023

PHYSICS

Mechanics and Properties of Matter

(Repeaters)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates :

1) *Calculators can be used to calculate problems.*
2) *Write intermediate steps during problems.*

Answer any **SIX** questions. **(6×2=12)**

1. a) What is inelastic collision?

b) What is tongue?

c) What are geostationary Satellites?

d) State parallel axis theorem.

e) Define poisson's ratio.

f) Define Stress.

g) Define surface tension.

h) How viscosity of liquid varies with temperature?

Answer any one full question 'a and b' OR 'c and d'.

2. a) State the principle of rocket. Hence derive the expression for velocity of single stage rocket. **(10)**

b) An electron of mass 9×10^{-31}kg revolves in a circle of radius 0.53A° around the nucleus of hydrogen with a velocity of 2.2×10^{6}m/s. Find the angular momentum of electron. **(2)**

(OR)

c) Derive expression for final velocity in case of elastic collision in one dimension. **(10)**

d) A torque of 20Nm is applied on a wheel initially at rest, Calculate the angular momentum of the wheel after 3 seconds. **(2)**

[P.T.O.

Answer any one full question 'a and b' OR 'c and d'.

3. a) State Kepler's laws of motion, and prove kepler's third law of planetary motion. **(10)**

b) Escape velocity of the earth 11.2km/s. Find the escape velocity of planet whose radius is twice and mass is thrice to that of the earth. **(2)**

(OR)

c) Give theory of Flywheel and hence obtain expression for moment of inertia of flywheel. **(10)**

d) An bar pendulum is having mass 1.2kg and moment of inertia about centre of gravity is 75×10^{-3}kgm^2. Find its radius of gyration. **(2)**

Answer any one full question 'a and b' OR 'c and d'.

4. a) Derive the relation connection between Young's modulus, Bulk modulus, and modulus of rigidity. **(10)**

b) When a pressure on a sphere is increased by 80 atmosphere. Then its volume decreases by 0.01%. Find the bulk modulus. **(2)**

(OR)

c) Give theory of cantilever and hence obtain expression for depression produced at free loaded end. **(10)**

d) The poisson's ratio and rigidity modulus of material of wire are 0.285 and 3.5×10^{10}N/m^2 respectively. Calculate the Young's modulus of the material of wire. **(2)**

Answer any one question 'a and b' or 'c and d'.

5. a) Describe Quinke's Method, with necessary theory for the determination of surface tension of mercury. **(10)**

b) Find the height to which water rises in capillary tube of diameter 1mm. If surface tension of water is 70×10^{-3}N/m and angle of contact is 60°. **(2)**

(OR)

c) Derive Poiseuille's equation for the flow of liquid in the tube. **(10)**

d) Find the viscous drag acting on steel ball of diameter 2mm and moving with terminal velocity 5×10^{-2}m/s in a liquid. **(2)**

Given -coefficient of viscosity is 0.6 Nms^{-2}.

19025/A5250

Reg. No. | | | | | | | | |

I Semester B.Sc. 6 (NEP) Degree Examination, March/April - 2023

PHYSICS (OEC)

Energy Sources

(Regular)

Time : 3 Hours **Max. Marks : 60**

Answer any Six questions. **(6×2=12)**

1. a) Define Energy
   b) What is hydroelectricity?
   c) What are fossil fuels?
   d) What is Nuclear energy?
   e) What is the principle of solar water heater?
   f) What is solar distillation?
   g) What is Geothermal energy?
   h) What is biomass energy?

Answer the following questions. **(4×12=48)**

2. a) What is renewable energy? Describe the types of renewable energy sources. **(8)**
   b) Distinguish between conventional and Non-conventional energy. **(4)**

(OR)

   c) Write a note on:
      i) Tidal energy
      ii) Hydroelectricity **(8)**
   d) Write a note on Ocean Thermal Energy Conversion (O.T.E.C). **(4)**

3. a) Explain different types of fossil fuels. **(8)**
   b) Write a note on 'Need of eco-friendly and green energy. **(4)**

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(OR)

c) Write a note on Nuclear energy what are it's advantages and disadvantages. (8)

d) What are the impacts of conventional energy sources on environment. Discuss the issues and challenges . (4)

4. a) Write a note on need and characteristics of photovoltaic (pv) systems. (8)

b) What is solar cooker? Explain it's working principle. (4)

(OR)

c) What is solar energy? Explain the applications of solar energy briefly. (8)

d) What are solar green houses? Explain in brief. (4)

5. a) What is wind turbine? Explain it's working with a neat diagram. (8)

b) Write a note on Ocean thermal energy. (4)

(OR)

c) Write a note on hydroelectric power generation (8)

d) Explain Geothermal resources in brief. (4)

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I Semester B.Sc. 4 Degree Examination, April - 2023

PHYSICS (OPTIONAL)

(Repeater)

Time : 3 Hours **Max. Marks : 80**

Instructions to candidates:

1. *Use Simple Calculator for Calculation*
2. *Write Intermediate steps.*

PART - A

1. Answer any TEN questions. Each carries 2 marks. **(10×2=20)**

a) Write the expression for velocity of a particle performing SHM.

b) Write the statement of parallel axis theorem.

c) Define angular momentum.

d) What is radius of Gyration

e) What is elastic collision? Give an example

f) What is viscosity.

g) Write the statement of Hooke's law.

h) Write the relation between Torque and angular momentum.

i) What is surface Tension?

j) If the orbital velocity of a satellite is 7.5 km/s. calculate its escape velocity.

k) What is central force?

l) Moment of Inertia of a circular disc about an axis passing through its centre and perpendicular to its plane is 0.5 kg m^2. If mass of If the disc is 1kg find the radius of Gyration.

PART - B

Answer any FOUR of the following. Each carries 5 marks. **(4×5=20)**

2. Derive expression for kinetic energy of a particle executing SHM.

3. State and prove kepler's second law of planetary motion.

4. State and prove work-energy theorem.

5. Derive expression for moment and Inertia of a rectangular lamina about on axis passing through its centre and parallel to one of its sides.

6. A spring is suspended vertically and loaded with a mass of 5kg A force of 8 kg wt stretches the spring through 0.15m. Calcualate its period of oscillation and frequency.

7. Find the excess pressure inside a spherical bubble of water of diameter 4×10^{-2}m. Surface tension of water is 72×10^{-3} N/m.

PART - C

Answer any FOUR of the following. Each carries 10 Marks. **(4×10=40)**

8. What is SHM. Derive an Expression for the resultant motion of composition of two rectangular SHM's of equal periods. **(2+8)**

9. Explain the principle of rocket. Derive Expression for final velocity of the rocket. **(3+7)**

10. a) State and prove perpendicular axis theorem.

    b) Derive expression for M.I of a circular ring about an axis passing through its centre and perpendicular to its plane. **(5+5)**

11. a) Define different types of elastic modulie.

    b) Derive the relation connecting between the elastic modulie **(3+7)**

12. a) What is surface tension and surface energy? Obtain the relation between them.

    b) Derive expression for co-efficient of viscosity of a liquid using stoke's formula. **(5+5)**

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I Semester ALL UG Courses Degree Examination, March/April - 2023
SPORTS AND RECREATION (OEC)
(Repeater/Regular)

Time : 2 Hours **Maximum Marks : 40**

Part-A
ಭಾಗ - ಅ

I. Answer any ten in two-three sentence each. **(10×2=20)**

ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಬೇಕಾದ **ಹತ್ತಕ್ಕೆ** ಎರಡು - ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ.

1. What is Physical Fitness?
   ದೈಹಿಕ ಸದೃಢತೆ ಎಂದರೇನು ?
2. Write the definition of Recreation.
   ಮನೋಲ್ಲಾಸದ ವ್ಯಾಖ್ಯೆ ಬರೆಯಿರಿ.
3. Define Leisure time.
   ವಿರಾಮ ಸಮಯವನ್ನು ಅರ್ಥೈಸಿರಿ.
4. Write the definition of Physical Fitness.
   ದೈಹಿಕ ಸದೃಢತೆಯ ವ್ಯಾಖ್ಯೆ ಬರೆಯಿರಿ.
5. Write any two objectives of Recreation.
   ಮನೋಲ್ಲಾಸದ ಯಾವುದಾದರೂ ಎರಡು ಉದ್ದೇಶಗಳನ್ನು ಬರೆಯಿರಿ.
6. Write any two Indoor Recreational games.
   ಯಾವುದಾದರೂ ಎರಡು ಒಳಾಂಗಣ ಮನೋಲ್ಲಾಸ ಆಟಗಳನ್ನು ಬರೆಯಿರಿ.
7. Write any two outdoor Recreational games.
   ಯಾವುದಾದರೂ ಎರಡು ಹೊರಾಂಗಣ ಮನೋಲ್ಲಾಸದ ಆಟಗಳನ್ನು ಬರೆಯಿರಿ.
8. Write the types of Traditional folk games.
   ಸಾಂಪ್ರದಾಯಿಕ ಆಟಗಳ ವಿಧಗಳನ್ನು ಬರೆಯಿರಿ.

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9. What is proper use of Leisure time?
ವಿರಾಮ ಸಮಯದ ಸದ್ಬಳಕೆ ಎಂದರೇನು ?

10. Expand F.I.F.A.
F.I.F.A. ವಿಸ್ತರಿಸಿರಿ.

11. Expand NIS.
NIS ವಿಸ್ತರಿಸಿರಿ.

12. Expand B.P.Ed.
B.P.Ed. ವಿಸ್ತರಿಸಿರಿ.

Part-B
ಭಾಗ - ಬ

II. Answer any four of the following. (4×5=20)
ಕೆಳಗಿನ ಬೇಕಾದ **ನಾಲ್ಕಕ್ಕೆ** ಉತ್ತರಿಸಿರಿ.

1. What are the features of Recreational games?
ಮನೋಲ್ಲಾಸ ಆಟಗಳ ಗುಣಲಕ್ಷಣಗಳಾವವು ?

2. Write the objectives of Recreational games.
ಮನೋಲ್ಲಾಸದ ಉದ್ದೇಶಗಳನ್ನು ಬರೆಯಿರಿ.

3. Write the importance of Recreation.
ಮನೋಲ್ಲಾಸದ ಮಹತ್ವ ಬರೆಯಿರಿ.

4. Explain two types of Recreation.
ಮನೋಲ್ಲಾಸದ ವಿಧಗಳನ್ನು ವಿವರಿಸಿರಿ.

5. Write the use of leisure time activities & their educational values.
ವಿರಾಮ ಸಮಯದಲ್ಲಿನ ಚಟುವಟಿಕೆಗಳ ಉಪಯೋಗವೇನು ಮತ್ತು ಅದರ ಶೈಕ್ಷಣಿಕ ಮೌಲ್ಯ ಬರೆಯಿರಿ.

6. Write a note on Recreation through sports and games.
ಮನೋಲ್ಲಾಸದ ಮೂಲಕ ಕ್ರೀಡೆ ಮತ್ತು ಆಟಗಳ ಬಗ್ಗೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

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I Semester All UG Courses (NEP) Degree Examination, March/April - 2023
Yoga and Fitness (OE)
(Regular/Repeater)

Time : 2 Hours **Maximum Marks : 40**

Part-A
ಭಾಗ - ಅ

I. Answer any ten in two-three sentence each. **(10×2=20)**

ಕೆಳಗಿನವುಗಳಲ್ಲಿ ಬೇಕಾದ **ಹತ್ತಕ್ಕೆ** ಎರಡು - ಮೂರು ವಾಕ್ಯಗಳಲ್ಲಿ ಉತ್ತರಿಸಿರಿ.

1. What is Yoga?
   ಯೋಗ ಎಂದರೇನು ?
2. Mention any two types of Yoga.
   ಯೋಗದ ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಕಾರಗಳನ್ನು ಬರೆಯಿರಿ.
3. Write any two components of Fitness.
   ಸದೃಢತೆಯ ಯಾವುದಾದರೂ ಎರಡು ಘಟಕಗಳನ್ನು ಬರೆಯಿರಿ.
4. What is Muscular endurance?
   ಸ್ನಾಯುಗಳ ಕಷ್ಟ ಸಹಿಷ್ಣತೆ ಎಂದರೇನು ?
5. What is Body Composition?
   ದೇಹ ರಚನೆ ಎಂದರೇನು ?
6. What is Specific Exercise?
   ನಿರ್ದಿಷ್ಟ ವ್ಯಾಯಾಮ ಎಂದರೇನು ?
7. Write any two Specific Exercises for Strength.
   ಸ್ನಾಯು ಶಕ್ತಿಯನ್ನು ಹೆಚ್ಚಿಸುವ ಯಾವುದಾದರೂ ಎರಡು ವ್ಯಾಯಾಮಗಳನ್ನು ಬರೆಯಿರಿ.
8. What is Agility ?
   ಚಪಲತೆ ಎಂದರೇನು ?

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9. Write any two benefits of Yoga on Personality.
ಯೋಗ ಮಾಡುವುದರಿಂದ ವ್ಯಕ್ತಿತ್ವಕ್ಕೆ ಆಗುವ ಯಾವುದಾದರೂ ಎರಡು ಲಾಭಗಳನ್ನು ಬರೆಯಿರಿ.

10. What is Personality?
ವ್ಯಕ್ತಿತ್ವ ಎಂದರೇನು ?

11. What is Nutrition?
ಪೋಷಕಾಂಶಗಳು ಎಂದರೇನು ?

12. Write any two Nutrients for growth of Bones.
ಮೂಳೆಗಳ ಬೆಳವಣಿಗೆಗೆ ಸಹಾಯವಾಗುವ ಯಾವುದಾದರೂ ಎರಡು ಪೋಷಕಾಂಶಗಳನ್ನು ಬರೆಯಿರಿ.

Part-B
ಭಾಗ - ಬ

II. Answer any four of the following. **(4×5=20)**
ಕೆಳಗಿನ ಬೇಕಾದ **ನಾಲ್ಕಕ್ಕೆ** ಉತ್ತರಿಸಿರಿ.

1. Write the importance of Yoga.
ಯೋಗದ ಮಹತ್ವಗಳನ್ನು ಬರೆಯಿರಿ.

2. Describe the types of yoga with examples.
ಉದಾಹರಣೆಗಳೊಂದಿಗೆ ಯೋಗದ ಪ್ರಕಾರಗಳನ್ನು ವಿವರಿಸಿರಿ.

3. Explain the Fitness Components.
ಸದೃಢತೆಯ ಘಟಕಗಳನ್ನು ವಿವರಿಸಿರಿ.

4. Write the relationship between Yoga, Fitness and Personality.
ಯೋಗ, ಸದೃಢತೆ ಮತ್ತು ವ್ಯಕ್ತಿತ್ವದ ಪರಸ್ಪರ ಸಂಬಂಧಗಳನ್ನು ಬರೆಯಿರಿ.

5. Write the Functions of Vitamins and Minerals.
ವಿಟಮಿನ್ ಮತ್ತು ಖನಿಜಾಂಶಗಳ ಕಾರ್ಯಗಳನ್ನು ಬರೆಯಿರಿ.

6. Write the Specific Exercises for Fitness Component.
ಸದೃಢತೆಯ ಘಟಕಗಳಿಗೆ ನಿರ್ದಿಷ್ಟ ವ್ಯಾಯಾಮಗಳನ್ನು ಬರೆಯಿರಿ.

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I Semester B.Sc. (CBCS) Degree Examination, April - 2023

ZOOLOGY

Paper - DSCT-1.1

Zoology

(Repeater)

Time : 3 Hours **Maximum Marks : 80**

Instructions to Candidates:

1) **All questions are compulsory.**
ಎಲ್ಲ ಪ್ರಶ್ನೆಗಳೂ ಕಡ್ಡಾಯ.
2) **Draw diagrams wherever necessary.**
ಅವಶ್ಯವಿದ್ದಲ್ಲಿ ಚಿತ್ರ ಬಿಡಿಸಿರಿ.

Answer any TEN of the following. **(10×2=20)**
ಬೇಕಾದ 10 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

I. 1) What is symmetry in animals ?
ಸಿಮೆಟ್ರಿ ಎಂದರೇನು ? ಪ್ರಾಣಿಗಳಲ್ಲಿನ ಸಿಮೆಟ್ರಿ ಬಗ್ಗೆ ಬರೆಯಿರಿ.

2) What are eucuelomate animals.
ಯುಸಿಲೋಮೇಟ ಪ್ರಾಣಿಗಳೆಂದರೇನು ?

3) Assign the following to their respective phyla.
a) Stick insect 2) Arenicola 3) Sepia 4) Echinas
ಕೆಳಗಿನವುಗಳನ್ನು ಅವುಗಳ ಫೈಲಾಗಳೊಂದಿಗೆ ಗುರುತಿಸಿ.
a) ಸ್ಟಿಕ್ ಇನಸೆಕ್ಟ್ 2) ಆರೇನಿಕೋಲಾ 3) ಸೇಫಿಯಾ 4) ಎಕೈನಸ್

4) What are the excretory organs in annellida ?
ಅನ್ನೇಲಿಡಾ ಗುಂಪಿನಲ್ಲಿನ ಎಕ್ಸ್ಕ್ರೀಟರಿ ಅವಯವಗಳಾವುವು ?

5) Name the different types of scales found in class-fishes.
ಮೀನುಗಳ ವರ್ಗದಲ್ಲಿನ ವಿಧ ವಿಧವಾದ ಸ್ಕೇಲುಗಳನ್ನು ಹೆಸರಿಸಿರಿ.

6) Assign the following to their classes.
a) Trypanosoma b) Metridium c) Pila d) spider
ಕೆಳಗಿನವುಗಳನ್ನು ಅವುಗಳ ವರ್ಗಕ್ಕೆ ಹೆಸರಿಸಿ ಸೇರಿಸಿರಿ.
a) ಟ್ರಿಪ್ಯಾನೋಸೋಮಾ b) ಮೆಟ್ರಿಡಿಯಂ c) ಪೈಲಾ d) ಸ್ಪೈಡರ

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7) What is meant by poikilothermy.
ಪೊಮಿಕಿಲೋಥರ್ಮಿ ಎಂದರೇನು ?

8) Assign the following to their respective classes.
a) salamander b) Viper c) duck d) squirrel
ಕೆಳಗಿನವುಗಳನ್ನು ಅವುಗಳ ವರ್ಗಕ್ಕೆ ಸೇರಿಸಿರಿ.
a) ಸಲಾಮಾಂಡರ b) ವೈಪರ c) ಬಾತುಕೋಳಿ d) ಸ್ಕ್ವಿರಲ್

9) What are pouchedi animals. Give example.
ಪೋಚಡಿ ಪ್ರಾಣಿಗಳೆಂದರೇನು ? ಉದಾಹರಿಸಿ.

10) What is Ratitai. Give example.
ರ್‍ಯಾಟಿಟೀ ಎಂದರೇನು ? ಉದಾಹರಿಸಿ.

11) Mention important characters of caecilians.
ಸಿಸಿಲಿಯನಗಳು ಮುಖ್ಯ ಗುಣಧರ್ಮಗಳನ್ನು ಬರೆಯಿರಿ.

12) Write the no of appendages in prawn.
ಪ್ರಾನ್ನಿನ ಅಂಗಾಂಶಗಳನ್ನು ಬರೆಯಿರಿ.

II. Answer any 3 of the following. (3×5=15)
ಬೇಕಾದ **3**ಕ್ಕೆ ಉತ್ತರಿಸಿರಿ.

13) What is alternation of generation ? Explain.
ಅಲ್ಟರ್ನೆಶನ ಆಫ್ ಜೇನರೇಶನ ಎಂದರೇನು ? ವಿವರಿಸಿ.

14) Explain retrogressive metamorphosis in Ascidians.
ಅಶಿಡಿಯನನಲ್ಲಿಯ ರೆಟ್ರೋಗ್ರೆಸ್ಸಿವ ಮೇಟೋಮಾರಪೋಸಿಸ್ ಬಗ್ಗೆ ಬರೆಯಿರಿ.

15) Write the adaptations of round worms.
ರೌಂಡವರ್ಮಗಳ ಅಡಾಪ್ಟೇಶನ ಬಗ್ಗೆ ಬರೆಯಿರಿ.

16) Describe the life history of Tape worm.
ಟೇಪವರ್ಮದ ಜೀವನ ಚಕ್ರವನ್ನು ವಿವರಿಸಿ.

III. Answer any 3 of the following. (3×5=15)
ಬೇಕಾದ **3**ಕ್ಕೆ ಉತ್ತರಿಸಿರಿ.

17) Describe metamorphosis in insects.
ಕೀಟಗಳಲ್ಲಿನ ಮೆಟಾಮೊರಪೋಸಿಸ್ ಬಗ್ಗೆ ಬರೆಯಿರಿ.

18) Explain the digestive system of Pila.
ಪೈಲಾದ ಡೈಜೆಸ್ಟಿವ ಸಿಸ್ಟಮ ಬಗ್ಗೆ ಬರೆಯಿರಿ.

19) Classify the phylum Coelenterata upto classes with two characters and two examples.
ಪೈಲಮ ಕೋರ್ಡೆವಾವನ್ನು ವರ್ಗಗಳವರೆಗೆ ವಿಂಗಡಿಸಿ ಎರಡು ಗುಣಧರ್ಮ ಮತ್ತು ಎರಡು ಉದಾಹರಣೆಗಳನ್ನು ಕೊಡಿರಿ.

20) Write the general characters of phylum echinodermata.
ಎಕೈನೋಡರ್ಮದ ಸಾಮಾನ್ಯ ಗುಣಧರ್ಮಗಳನ್ನು ಬರೆಯಿರಿ.

IV. Answer any 3 of the following. **(3×5=15)**
ಬೇಕಾದ 3ಕ್ಕೆ ಉತ್ತರಿಸಿರಿ.

21) What is anadromous migration explain.
ಅನೋಡ್ರಾಮಸ ಮೈಗ್ರೇಶನ್ ಎಂದರೇನು ವಿವರಿಸಿ.

22) Explain the parental care in Anurans.
ಅನುರನಗಳಲ್ಲಿನ ಪೇರೆಂಟಲ ಕೇರ ಬಗ್ಗೆ ವಿವರಿಸಿ.

23) What are Poisonous snakes. Give the identifying marks of Poisonous snakes.
ವಿಷಕಾರಿ ಹಾವುಗಳೆಂದರೇನು. ಅವುಗಳನ್ನು ಗುರುತಿಸುವ ಬಗ್ಗೆ ಬರೆಯಿರಿ.

24) What are egg laying - mammals.
ಮೊಟ್ಟೆ ಇಡುವ ಸಸ್ತನಿಗಳು ಎಂದರೇನು.

V. Answer any 3 of the following. **(3×5=15)**
ಬೇಕಾದ 3ಕ್ಕೆ ಉತ್ತರಿಸಿರಿ.

25) Write the classification of phylum-chordata upto classes with one example each.
ಪಾಯಿಲಮ ಕೋರ್ಡೆಟಾದ ವರ್ಗೀಕರಣ ಮಾಡಿ ಎರಡು ಗುಣಲಕ್ಷಣಗಳು ಮತ್ತು ಎರಡು ಉದಾಹರಣೆಗಳನ್ನು ಕೊಡಿರಿ.

26) Write the general character of birds.
ಪಕ್ಷಿಗಳ ಸಾಮಾನ್ಯ ಗುಣಧರ್ಮಗಳನ್ನು ಬರೆಯಿರಿ.

27) Write the key characters of class chondrichthyes.
ಕೊಂಡ್ರಿಯಿಕಥಿಸ್ ವರ್ಗದ ಮುಖ್ಯ ಗುಣಗಳನ್ನು ಬರೆಯಿರಿ.

28) What are Hemichordates. Give their chordate and non chordate characters.
ಹೆಮಿಕೋರ್ಡೆಟ ಎಂದರೇನು. ಅವುಗಳಲ್ಲಿನ ಕೋರ್ಡೆಟ ಮತ್ತು ನಾನ ಕೋರ್ಡೆಟ ಗುಣಧರ್ಮ ಬರೆಯಿರಿ.

47034/A0340

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I Semester B.Sc. (NEP) Degree Examination, April - 2023

ZOOLOGY

Cytology, Genetics and Infections-Diseases

(Repeater/Regular)

Time : 2 Hours **Maximum Marks : 60**

Instructions to Candidates:

1) **Attempt all questions - Q I, II, III, IV and V**
ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳನ್ನು ಉತ್ತರಿಸಿರಿ. **Q I, II, III, IV and V**
2) **Draw diagrams wherever necessary.**
ಅವಶ್ಯವಿದ್ದಲ್ಲಿ ಅಂದವಾದ ಚಿತ್ರವನ್ನು ಬಿಡಿಸಿರಿ.

I. Answer any six of the following. (6×2=12)
ಕೆಳಗಿನ ಯಾವುದೇ (6) ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

1. Write the Chemical constituents of Plasma membrane.
ಪ್ಲಾಸ್ಮಾ ಮೆಂಬರೇನಿನ ಕಾರ್ಯಗಳ ಬಗ್ಗೆ ಬರೆಯಿರಿ.
2. What are Peroxisomes?
ರೈಬೋಸೋಮಗಳ ವಿಧಗಳನ್ನು ಬರೆಯಿರಿ.
3. Write the types of DNA and RNA.
DNA ಮತ್ತು RNA ಪ್ರಕಾರಗಳನ್ನು ಬರೆಯಿರಿ.
4. What is Euchromatin and Heterochromatin?
ಯುಕ್ರೋಮ್ಯಾಟಿನ ಮತ್ತು ಹೆಟೆರೋಕ್ರೋಮ್ಯಾಟಿನ ಎಂದರೇನು ?
5. Define Incomplete Dominance.
ಮಲ್ಟಿಪಲ ಅಲ್ಲೀಲಿಸಮನ್ನು ಉದಾಹರಣೆಯೊಂದಿಗೆ ವ್ಯಾಖ್ಯಾನಿಸಿ.
6. What is 'Y' linked inheritance?
'Y' ಲಿಂಕಡ್ ಅನುವಂಶೀಯತೆ ಎಂದರೇನು ?
7. What is Chromosomal aberration?
ಜೀನ ಇಂಟರ ಆಕ್ಸನ್ ಎಂದರೇನು ?
8. What is Filariasis? Write the conservative agent.
ಫಿಲೇರಿಯಾಸಿಸ್‌ನ್ನು ವಿವರಿಸಿ.

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II. Answer any three of the following. (3×4=12)

ಯಾವುದಾದರೂ 3 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

9. Explain the fluid Mosaic model of the structure of Plasma-Membrane.
ಪ್ಲಾಸ್ಮಾಮೆಂಬರೇನಿನ ಫ್ಲುಡ ಮೊಸಾಯಿಕ ನಮೂನೆಯನ್ನು ವಿವರಿಸಿರಿ.
10. Write a note on structure and functions of Mitochondrion.
ಮೈಟೊಕೊಂಡ್ರಿಯಾದ ರಚನೆ ಮತ್ತು ಕಾರ್ಯಗಳನ್ನು ಟಿಪ್ಪಣಿಸಿ.
11. Explain Endocytosis and Exocytosis.
ಎಂಡೋಸೈಟೋಸಿಸ್ ಮತ್ತು ಎಕ್ಸೋಸೈಟೊಸಿಸನ್ನು ವಿವರಿಸಿ.
12. What is Endomembrane system? Explain.
ಎಂಡೋಮೆಂಬರೇನ ಸಿಸ್ಟಮ ಎಂದರೇನು ? ವಿವರಿಸಿ.

III. Answer any three of the following. (3×4=12)

ಯಾವುದಾದರೂ 3 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

13. Explain the structure and functions of Nucleus.
ನ್ಯೂಕ್ಲಿಯಸನ ರಚನೆ ಮತ್ತು ಕಾರ್ಯಗಳನ್ನು ವಿವರಿಸಿ.
14. Explain the Cell-cycle.
ಸೆಲ ಸೈಕಲನ್ನು ವಿವರಿಸಿ.
15. Write the Chemical structure of DNA.
ಡಿಎನ್ಎ ದ ರಾಸಾಯನಿಕ ರಚನೆಯನ್ನು ಬರೆಯಿರಿ.
16. Write the types of RNA and their functions.
ಆರ್ಎನ್ಎ ಯ ವಿಧಗಳು ಮತ್ತು ಕಾರ್ಯಗಳ ಕುರಿತು ಬರೆಯಿರಿ.

IV. Answer any (3) of (4) the following. (3×4=12)

ಯಾವುದಾದರೂ 3 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

17. Explain Mendel's principle of Independent Assortment.
ಮೆಂಡಲ್ನ ಪ್ರಿನ್ಸಿಪಲ ಆಫ್ ಇಂಡಿಪೆಂಡೆಂಟ ಅಸ್ಸೊರ್ಟಮೆಂಟನ್ನು ವಿವರಿಸಿ.
18. Explain sex-linked inheritance in drosophila.
ಡ್ರೊಸೊಫಿಲಾದಲ್ಲಿಯ ಸೆಕ್ಸ ಆಧಾರಿತ ಅನುವಂಶೀಯತೆಯನ್ನು ವಿವರಿಸಿ.
19. Explain interaction of genes with respect to complementary factors.
ಇಂಟರಾಕ್ಸನ ಆಫ್ ಜೀನ್ಸನ ಕಾಂಪ್ಲಿಮೆಂಟರಿ ಫ್ಯಾಕ್ಟರಗಳ ಕುರಿತು ವಿವರಿಸಿ.
20. Explain cytoplasmic inheritance.
ಸೈಟೋಪ್ಲಾಸ್ಮಿಕ ಅನುವಂಶಿಯತೆಯನ್ನು ವಿವರಿಸಿ.

V. Answer any (3) of (4) of the following. **(3×4=12)**

ಯಾವುದಾದರೂ 3 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

21. Explain Chromosomal aberration with respect to numerical aberrations.
ಕ್ರೋಮೋಸೊಮಗಳಲ್ಲಿನ ಸಂಖ್ಯಾ ನ್ಯೂನ್ಯತೆಯನ್ನು ವಿವರಿಸಿ.

22. Write a note on Pathogenic organisms, viruses, Bacteria and Fungi.
ಸಾಂಕ್ರಾಮಿಕ ಜೀವಿಗಳಾದ ವೈರಸ್, ಬ್ಯಾಕ್ಟೀರಿಯಾ ಮತ್ತು ಫಂಗಸಗಳು ಕುರಿತು ಟಿಪ್ಪಣಿಸಿ.

23. Describe the life cycle of Tape-worm.
ಟೇಪವರ್ಮದ ಜೀವನ ಚಕ್ರವನ್ನು ವಿವರಿಸಿ.

24. Write a note on Karyotyping.
ಕ್ಯಾರಿಯೋಟೈಪ ಕುರಿತು ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.
