ªÀÄzÀÀ I

ತೃತೀಯ ಭಾಷೆ ಕನ್ನಡ

I. ¸ÀÆP Gvg Dj¹ §g¬Äj. 1x15=15

1). 'Cª£Ä' JA§ÄzÄ
J). gÆq£ÁªÄ ©). C£xð£ÁªÄ ¹) ¸ªð£ÁªÄ r). CAQv£ÁªÄ,

2). '£Á£Ä' JA§ÄzÄ F ¸ªð£ÁªÄ ¥z
ಎ). ಉತ್ತಮ ಪುರುಷ ಬಿ). ದ್ವಿತೀಯ ಪುರುಷ ಸಿ).ಮಧ್ಯಮ ಪುರುಷ ಡಿ). ಪ್ರಥಮ ಪುರುಷ

3). '¥ÃmAiÄ°' F ¥zz°gÄª «¨Q ¥æÀAiÄ
J). C° ©) AiÄ° ¹). E r). E°

4). ¥æÁªAv ¥zz C£ °AU gÆ¥ AiiÁªÀzÄ?
J). ¥æÁªÁAv ©). ¥æÁªAv ¹) ¥Áæªª Av r). ¥Áæª Av

5. 'eÁ£' F ¥zz «gÄzÁxðP ¥z AiiÁªÀzÄ?
J).CeÁ£ ©). ¸ÄeÁ£ ¹). «eÁ£ r). ªÄºÁeÁ£

6) 'xªgÄªÄ£' ¥zz ±Äz gÆ¥
J). zªgÄªÄ£ ©). vªgÄªÄ£ ¹). zÃªgÄ ªÄ£ r). vÆÃgÄªÄ£

7). 'CtA¢gÄ' ¥zz KPªZ£ gÆ¥
J). CtgÄ ©). Ct ¹). CtU¼Ä r). CtªA¢gÄ

8). '£UÄ«£ ¥gz' E°gÄª C®APÁg
ಎ). ಉಪಮಾಲಂಕಾರ ಬಿ). ದೃಷ್ಟಾಂತಾಲಂಕಾರ ಸಿ). ಶ್ಲೇಷಾಲಂಕಾರ ಡಿ). ರೂಪಕಾಲಂಕಾರ

9). 'PÃzÁg z±ð£z §ºÄ¢£U¼ §AiÄP FqÃjvÄ' F ªÁP z°gÄª QÃæiiÁ¥z
J). z±ð£ ©). PÃzÁg ¹). §ºÄ¢£ r). FqÃgÄ

10) N ££ vÁ¬Ä E°g¨ÃPÁz ¯ÃR£ aº
J). «ªguÁvP ©). Gz gt ¹). C®«gÁªÄ r). ¥æÁxðP

11). EªÀU¼° UÄA¦U ¸Ãgz ¥z AiiÁªÀzÄ?
J). ¸g¸g ©). ¥l¥l ¹). U§U§ r). ªiÁqÄ ªiÁqÄ

12). 'Cª' ¥zz UÁæªPgÆ¥ _____
J). Cª¼Ä ©). Cª¼Ä ¹). Cª½U r). Cª¼

13). 'zÃªÁ®AiÄ' ¥zP¦ ¥ÀæÁg ºÁQzÁU »ÃUÁUÄvz
J). - - - - ©). - - uu ¹). uu - - r). u - u-

14). 'ವಿದೂಷಕ' ಪದದ ಸಮಾನಾರ್ಥಕ ಪದ
J). ªÄAwæ©). £ÁlPUÁg ¹). Cg¸ r). ºÁ¸¦UÁg

15). PÃ¼Ä: PÃ½AiiÁ£Ä:: ªiÁqÄ : _____
J). ªiÁq£Ä ©). ªiÁrAiiÁ£Ä ¹). ªiÁqÄª£Ä r). ªÄrAiÄ£Ä

II. ºÀÄA¢¹ §g¬Äj 1x5=5

16). ºÀ¸U£¦q C£ÄPguÁª¦AiÄ
17). ¥Á tUæet C£xð£ÁªÄ
18). PÄAl ¢gÄQ
19). §g§gzÄ UÆÃPÁP
20). ವಿನಾಯಕ ಕೃಷ್ಣ ªÄzÄª
DzÃ± ¸A¢

III. ©l¸¦¼ vÄA©j. 1X5=5

21). ¸ºÁ¦¢æÄ ªÄºÁP«_____
22). »v® Vq _____
23). §qªg ¸Æ¸U £Á°U ¸r®Ä ©q§®ªg® _____
24). ¨Æ«Ä¬ÄAz ¹rzÄ §Az ZAzæ_____ ¸Äv ¸ÄvÄwgÄª£Ä
25). '¨gvÃ± ªÉ¨ª' EzÄ MAzÄ _____ PÁª¦ ¥ÀÁg

IV. F P¼V£ ¥æÀU½U MAzÆAzÄ ªÁP¦z° Gvj¹. ` 1X8=8

26). ¨gv£ vÁ¬Ä KP Cv¼Ä?
27). ¸ÄªÄÃgÄ ¥ªðvz°gÄª LzÄ ²RgU¼Ä AiiÁª¦ª¦?
28). gÁWt v¯U PÉºÆvÄ PÄ½vÄPÄ¼®Ä PÁgtªÃ£Ä?
29). ¸Æ¸AiÄ£Ä¦ ªÄ£AiÄv ¸¼z ¨ÁªU¼Áª¦ª¦?
30). UÁA¢Ãf AiiÁjU ¨ÁU¦g«AiiÁVz¦gÄ?
31). ¨Ã«£ º¼ J° vÄ¼ÄPÁrvÄ?
32). ºqUÄ AiiÁg PË±®¦P¦ P¼¸«lAwz?
33). ¥ÄgAzgzÁ¸g JgqÄ PÉwU¼£Ä¦ º¸j¹.

V. F P¼V£ ¥æÀU½U 2 ªÁP¦z° Gvj¹. 15X2=30

34) a£¦z PÆÃ°£ ªÄ»ªÄ K£Ä?
35) ¨Ágv ªiÁvAiÄ §U¦ ¨ÁgwÃAiÄg ¨ÁªÉU¼Ã£Ä?
36). ¯ÃRQU ªÄjvÃ£ï¹AUï DUÄª D¸ AiiÁPÁ¬ÄvÄ?
37). PÁgAvg ¤®Äª¦ K£ÁVvÄ?

38). gÁªÀZÀzÀgÀÄ AiÀÄgÀ ªÀÄ¸ÀÆj£À ¸ÀvÀÄÛæ ªÀiÁq®Ä PÀgÀtªÀÄ£Ä?
39). '®otÚ CAv AiiÁP PjvÁg' JA§ ¥ÀæÀÄÚ CfÛ ºÀ½z Gvgªï£Ä?
40). ±Á¹ÖÚ¼ ªÀÄ£AiÄ CrÚ ªÀ£ ªÀvÀ zÀªg ¸Á¤ÛzÀ ºÀVvÀ?
41). ¥ÁæÀÄ£ P«Ú¼£À fÃª£¢ ¥ÀzÀ° AiiÁª ºÀÄ°PAiÀÄ¢Ú ¥jZ¬Ä¸ÀÁVz?
42). ಕವಿ ಗಾಂಧೀಜಿಯವರನ್ನು 'ಪವಾಡಪುರುಷ' ಎಂದು ಏಕೆ ಕರೆದಿದ್ದಾರೆ?
43). 'vÀÄj¸Ä ¨Á g vªgÀÄg' JAzÀ §¼ÚÁg ºÀ½zÀ KP?
44). ªZ£PÁgg ¥ÀÄg z£z ¸gÀÄ¥ ºÀVvÀ?
45). P« ¥ÀvÀæÀ ¨ÁgvPÀ »A¢gÀÚ®Ä wªiÁð¤¹zÀ KP?
46). AiiÁªÁÚ zªÀðª£À Ú½¸Äª ¥ÀæÀÄvÀ ªiÁq¨ÃPAzÀ zÁ¸gÀ ºÀ½zÁÀg?
47). ¥ÀÆtðªiÁ¼ ÚAq£ ªÀÄ£ ºÀVvÀ?
48). zÁÀ£z ªÀºvªÀ£Ä?

VI. F P¼V£ ºÀ½PÚ¼£À ¸Az¨ð¸»v «ªj¹. 3X4=12
49). "CªgÀ ¥Áo ºÀ¼ÀwzÀ ªÀÄ£¬ÄAz ºÀtÚ P¢AiÀÄwzÀgÀ"
50). 'ಇದು ಬ್ರಹ್ಮಾಂಡ – ನೂರು ಭಾಷೆಗಳ ನವಖಂಡ'
51). "¤£À vªgÀÄg £Á£Ã£Ä §¯Ã£Ä?"
52). 'ª¼À MAzÀ SÁ° ZÀQ£ ºÁÚ'

VII. ¥zÀ¨ÁÚ ¥ÀÆtðÚÆ½¹ ` 3
53). PÁ®£ zÀÆvgÀ _____
_____
_____ zªÀðª Ú½¹gÀÆÃ

VIII. F P¼V£ ¥ÀæÀÄÚ½Ú 6 ªÁPÀz° Gvj¹. 2X4=8
54). ತೆನಾಲಿ ರಾಮಕೃಷ್ಣ ಮತ್ತು ಗೌರಿ ಈ ಇಬ್ಬರಲ್ಲಿ ಮೊದಲು ಸತ್ತವರು ಯಾರೆಂದು
w½AiÀÄ®Ä ªÀÄÄwæÀÄÄ ªiÁrz G¥ÁÃiÀªÃ£Ä?
55). ¯ÃRPgÀ ¯Á¯ï¨ÁV£ Z®ÄªÀ£À ºÀÚ ªtðzÁÀg?

IX. F P¼V£ ¥ÀæÀÄÚ½Ú 6 ªÁPÀz° Gvj¹. 1x4=4
56). 'AiÀÄÄÚÁ¢ §gÀªÀzÀ £ªÀÚAzÃ?' ¥zÀz ¸ÁgÁA±ª£À ¤ªÀ ªiÁvÀÚ¼° §g¬Äj

X. 57). ¤Ã£Ä 'ªÀºÃ±'/ªiÁ®w ºÀv£Ã vgÚw, ¸gPÁj ¥ÀæÀ±Á¯, zÁgªÁq JAzÀ ¨Á«¹. ¤ªÀ ±Á¯Á ±ÀPtP ¥ÀæÀ¸z° ¨ÁÚª»¸®Ä 500 gÆ¥Á¬ÄÚ¼£À P¼Ä»¹ PÀÆqÀªÀAv ¤ªÀ vAzÚ MAzÀ ¥vÀæ§g.
Cxª Á 1x5=5
¤ÃªÀ ¨AÚ¼Æj£ ¸zÁ²ª £Ug §qÁªuAiÀ ¤ªÁ¹ ªÀÃºÀ£/gªiÁ JAzÀ ¨Á«¹ ¤ªÀ §qÁªuAiÀ° MAzÀ ¥ÁæÀ«ÄP DgÀÃÚ PÃAzÀæÀ£À ¥ÁæÀ©¸ÄªÀAv ªÀºÁ£Ug¥Á°PAiÀ DAiÀÄPjUÀÄAzÀ ªÀ£« ¥vÀæ§g¬Äj.

XI 58). MAz£À PÀjvÀ ¥ÀæÀAz §g¬Äj. 1x5=5
1. QÃæÀÚ¼À 2. Cgt ¸AgPu 3. ¸Ä¢ ªiÁzªÀÚ¼À ªÀvÀ ¥juÁªÀ.

ªÀiÁzÀ II

ತೃತೀಯ ಭಾಷೆ ಕನ್ನಡ

I. ¸ÀÆP Gvg Dj¹ §g¬Äj. 1x15=15

1). ªÀVðÃAiÄ ªÀÄAd£z ¥ÀæªÀUðz Lz£AiÄ CPgª£À »ÃUAzÄ PgAiÄÄvÁg.
J). C®¥ÁÀæ ©). ªÄºÁ¥ÁÀæ ¹). C£Ä£Á¹P r). AiÆÃUªÁº

2). 'PÄªiÁg' ±§¸z vzª
J). PÄªig ©). PÄªg ¹). PÄªÁg r). PÄ:ºg

3). "D H j£° JgqÄ ¸gÆÃªgU½z¸ª".- F ªÁP¸z° ¸ASÁ¸ªÁZP AiiÁª¸zÄ?
J). D ©). H gÄ ¹). JgqÄ r). ¸gÆÃªg

4). P®ª¸, CªgÄ, zQt, J° ____ Eª¸U¼° ¸ªð£ÁªÄ ¥z
J). P®ª¸ ©). CªgÄ ¹). zQt r). J°

5). QæÃiÁ ¥zz ªÄÆ®gÆ¥P¸ »ÃUAzÄ PgAiÄÄvÁg.
J). zÁvÄ ©). C¸AiÄ ¹). ¸A¢ r). ¸ªiÁ¸

6). 'P«' ¥zª£À °AU §z°¹ §gzÁU »ÃUÁUÄvz.
J). PªAiÄwæ ©). P«AiÄwæ ¹). P«wæ r). P«¬Äwæ

7). 'ಹೋಗು' ಈ ಪದವು ಭವಿಷ್ಯತ್ ಕಾಲದಲ್ಲಿ ಹೀಗಾಗುತ್ತದೆ.
J). ºÆÃUÄvÁ£ ©). ºÆÃUÄª£Ä ¹). ºÆÃz£Ä r). ºÆÃUÄwzÁ¸£.

8). F ±§¸ ¢gÄQAiiÁVz.
J). UqUq ©). x¼x¼ ¹). ªÆzªÆz®Ä r). vlvl

9). ¸ËAzAiÆÃð¥Á¸P, gxÆÃvª, ¸ËAzAiiÁðªÄÈv, £ªÇÃzAiÄ Eª¸U¼° UÄA¦U ¸Ãgz ¥z
J). ¸ËAzAiÆÃð¥Á¸P ©). gxÆÃvª ¹). ¸ËAzAiiÁðªÄÈv r) £ªÇÃzAiÄ

10). zªÄð ±§¸z «gÄzÁ¸xðP ¥z
J). ¸Äzªð ©). Czªð ¹). ¤zªð r). «zªð

11). PAz ¥z¸ F UtP¸ ¸ÃgÄvz.
J). CPgUt ©). CA±Ut ¹) ªtðUt r). ªiÁvÁæt

12). 'ºQ¸ ºt£À wÀ£À¸vz' J£ÄªÁzÄ _____
J). ¸ÁªiÁ£¸ ªÁP¸ ©). «Ä±æªÁP¸ ¹). ¸AAiÆÃfv ªÁP¸ r). ¸AAiÄÄP ªÁP¸

13). ¤zÁ£ : ªÄ®£ :: ¤z£ : _____
J). ¸«ÄÃ¥ ©) ¸ÁªÁ¸ ¹). ¸A¥vÄ r). a£À

14). 'En¸t¸Ä' ¥zz Cxð _____
J). EnU EqÄ ©). ®p¸Ä ¹). UÄj¸ÁUÄ r). zÁj ©qÄ

15). ¥ªðv, PÀAq, PÀÆ, ¸ªiÁ¢ - EªÀU¼° C£ÀzÃ²ÃAiÀ ¥z
J). ¥ªðv ©). PÀAq ¹) PÀÆ r). ¸ªiÁ¢

II. ºÀÆA¢¹ §g¬Äj 1x5=5

16). ªÀvÀÆªÀÄ GzÁÌgªÁZP
17). ¤ÃgÀ¤r ಷಷ್ಠಿ ವಿಭಕ್ತಿ
18). CAiÀÄÃ ¯ÀÆÃ¥¸ÁÃ¢
19). ªÀÄ£AiÄ ªÀÄP¼Ä
20). ªÀÄUÄ eÀÆÃr¥z
ªÀÄUÄU¼Ä

III. ©l ¸¼ ¨wðªiÁr 1x5=5

21). _____ gÄ P£Áðl Pz ºÁUÀÆ ¨gv RAqz ¥ÁæªÀÄÆÃVP «eÁ£z EwºÁ¸z°
CdgÁªÀggÁVzÁg.
22). ಕವಿಯ ಮಗ _____ ವರ್ಷಗಳ ಹಿಂದೆ ತೀರಿ ಹೋಗಿದ್ದನು
23). zÀÆgz ¨l PtU _____
24). 'ªiÁ£ª d£À zÀÆqzÀ' JAzÀ ºÁ½zªgÀ _____
25). G½zg PÁqÀ ; C½AiÀzÀ _____

IV. MAzÀ ªÁPÀz° Gvj¹ 1x8=8

26). ªÁ¸À JAzgÃ£À?
27). 'CA©PÁv£AiÀzv' AiiÁg PÁªÀ£ÁªÀ?
28). ರಾಮಕೃಷ್ಣನ ಹೆಂಡತಿಯು ತನ್ನ ಗಂಡನು ಎಲ್ಲಿಗೆ ಹೋದನೆಂದು ರಾಣಿಗೆ ಹೇಳಿದಳು?
29). AiiÁg «ZÁg¸gt ¯ÃRQÃiÀ ªÀ£¹£° UÀÆAz® J©¹vÀ?
30). ಯಾರ ಬಳಿಯಲ್ಲಿ ಕಾರಂತರು ಶಿಷ್ಯ ವೃತ್ತಿ ಗಿಟ್ಟಿಸಿದರು?
31). ºqV£ ¥æªiÁtz° K££Ã PÀl§ºÀzÀ?
32). KPÀÃ¨ÁªÁ¢Az AiiÁg£Ã ¨f¸¨ÃPÀ?
33). 'UÁA¢Ã' ¥zÀz° §¼¹gÀª 'ºÀrAiÀ ºÀ¼ÀU¼À' AiiÁgÀ?

V. F P¼V£ ¥æªÀU½U 2 ªÁPÀU¼° Gvj¹ 15x2=30

34). ¸Æ¸ ¸ÁAiÀÄª ªÀÆz®Ä v£Ã PÀlÄA§zªg §UÀ K£AzÀ AiÀÃa¸ÄvÁ¼?
35). ¯ÃRQ ®otUAiÀ d£À gº¸Àz §UÀ «ZÁgªiÁr §½P ¸ªiÁzÁ£ ¥lÄPÀÆAqzÀ KP?
36). ¨gvPÀªiÁg a£Àz PÀÃ°£ ªÀ»ªÀÄAz vÁ¬ÄAiÀ£Ã ºÀU ºÀqÀQz?
37). ¨gvPÀªiÁg£ P£¹£° vÁ¬Ä §AzÀ K£AzÀ ºÁ½z¼Ä?
38). ಗೋಕುಂಡದ ವೈಶಿಷ್ಟ್ಯ ಏನು?
39). ªÀP¼ gAU¨Æ«ÄU PÁgAvg PÀÆqÀU K£Ä?
40). UÁA¢AiÀ£Ã '¸ªÇÃðzAiÀ ¸ÀÆvæÁg' JAzÀ KP PgAiÀ¯ÁVz?
41). ¥ÀgAzgzÁ¸gÀ ªiÁ£ª d£À §UÀ K£Ä ºÁ¼ÄvÁg?
42). zÁ£ªA§ CVÀAiÀÄ K££Ã z»¹ ¤ªÁj¸ÄªÀzÄ?
43). DzÀ¤P P«U¼£Ã ¥æªÀwAiÀÆA¢U ºÀU ¸«Ä®£ UÀÆ½¸¯ÁVz?

44). AiiÁª zÁjAiÄ° ºÀÄÃUÄªÀv ¨Á¯ §¼UÁg¤U w½¹z¼Ä?
45). P«AiÄ£Ä£À £ÀÄÃrz »jAiÄg¯Áz §z¯Áªu K£Ä?
46). gÁAiÄg£Ä 'bÀÄmÁ UÁA¢' JAzÄ KP Pg¢zÁ¼g?
47). ¥Æt ðªiÁ¼Ä ¸£Á¹AiÄ §½ ºÀÄÃU®Ä PÁgt ªÄ£Ä?
48). £ªÄ zÃºª CZÄ ªÄÄjz ºÁ¼Ä §ArAiÄAvÁUÄª¼zÄ AiiÁªÁU?

VI. F P¼V£ ºÃ½PU¼£Ä ¸Az¨ð ¸»v «ªj¹. 4x2=8
49). PÀ¼ª¨Á« PÀgAiÄÄª¼zg° ¸ÁªiÁfP £Á¼AiÄ«®.
50). £gªÃ U®Äª¼ Oav¼ªÃ Z®Äª¼.
51). ¨Á¼ §®P¼ ©qÄ, ¹Ã¨ JqP¼ ©qÄ.
52). PÁgAvjU §qv£«z¼gÆ ¸ÁA¸¼wPªÁV §qv£«g°®.

VII. ¥z¼¨ÁU ¥ÆwðUÀ½¹ 3
53). ¥A¥ ªÄºÁZ® ----------

---------- §AiÄ®Ä

VIII. F P¼V£ ¥æÃU½U 6 ªÁP¼z° Gvj¹. 2x4=8
54). 'ªÄv §zÄQj' £ÁlPz° ºÁ¸¼z eÆv §gUÁ®z ©ÃPgv ºÃU ª¼PªÁVz?
55). ¯Á¯ï¨ÁV£°gÄª ¸ÁgPU¼Ä AiiÁª¼ª¼?

IX. F P¼V£ ¥æÃU½U 6 ªÁP¼U¼° Gvj¹. 1x4=4
56). 'AiÄÄUÁ¢ §gÄª¼zÄ £ªÄUAz? P«vAiÄ D±AiÄªÃ£Ä?

X.57).¤Ãª¼ ¥æ¯ï/ ¥æe ºv£Ã vgUw ¸g¸w «zÁ®AiÄ, GqÄ¦ JAzÄ ¨Á«¹ C£ÁgÆÃU¼z
PÁgt ge PÆÃj ¤ªÄ ±Á¯Á ªÄÄSÆÄ¥ÁzÁ¼AiÄjU MAzÄ ge Cfð §g¬Äj,
Cxª Á 1x5=5
¤Ãª¼ ªÄÉ¸Æj£ ª¸Av£Ug §qÁªuAiÄ ¤ªÁ¹ gAfvï JAzÄ ¨Á«¹ ¤ªÄ §qÁªuAiÄ°
©Ã¢¢Ã¥ C¼ªr¸ÄªAv £Ug ¥Á°PAiÄ Cz¼PjUÆAzÄ ªÄ£« ¥væ§g¬Äj.

XI.58)AiiÁª¼zÁzgÆ MAzg PÄjvÄ ¥æ§Az §g¬Äj. 1x5=5
1. d®¸AgPuAiÄ CUv¼v
2. ªgzQu - MAzÄ ¸ÁªiÁfP ¸ªÄ¸¼
3. ¥j¸g ªiÁ°£¼z ¥juÁªÄU¼Ä.

****

MATHEMATICS

EXAMPLE FOR DIFFERENT TYPES OF QUESTIONS

Time: 3 Hrs. Max.Marks: 100

I **Multiple choice Questions**
Four alternatives are given for each Question.
Choose the correct answer and write its alphabet along with answer

1X30=30

1. If set A={1,2,3,4}, B={2,4} then A-B=
   a) {1,3} b) {2,4} c) {1,2,3,4} d) { }
   Ans: _____

2. In a G.P. Tn x R is =
   a) Tn-1 b) Tn c) Tn+2 d) Tn+1
   Ans: _____

3. If A= -A' then the matrix A is
   a) Scalar matrix b) Diagonal Matrix
   c) Skew symmetrix matrix d) Symmetrix Matrix
   Ans: _____

4. In nPr, r th place can be filled up in
   a) n+r-1 b) (n-r+1) c) n+(r+1) d) n-r-1
   Ans: _____

5. The H.C.F of (5X-10) and ($5X^2$-20) is
   a) (x+2) (X-2) b) 5(X+2) (X-2) c) 5(X+2) d) 5(X-2)
   Ans: _____

6. The product of H.C.F and L C M of two expression is $6a^3b^4c^2$.If one expression is $2a^3b^3c^2$ then the other expression is
   a) $12a^6b^7c^4$ b) $3a^3b^4c^2$ c) 3a d) $2a^3b^3c^2$
   Ans: _____

7. The expanded form of $\sum_{abc} a^2 + 2$ is
   a) $a^2+b^2+C^2$ b) $a+2+b^2+2+c^2+2$ c) $a^2+b^2+c^2+2$ d) $a^2+b^2+c^2-2$
   Ans: _____

8. $(a^2+b^2+ab)(a-b)$ this is equal to
   a) $(a-b)^3$ b) a^3-b^3 c) $(a+b)^3$ d) a^3+b^3
   Ans: _____

9. The Rationalising factor of $2\sqrt[3]{x}$ is
   a) $2\sqrt[3]{x}$ b) $\sqrt{x^2}$ c) $\sqrt[3]{x^2}$ d) $\sqrt[3]{x}$
   Ans: _____

10. If $F=\frac{GMm}{R^2}$ then R is given by

a) $\sqrt{\frac{F}{GMm}}$ b) $\sqrt{\frac{GMm}{F}}$ c) $\sqrt[3]{\frac{GMm}{F}}$ d) $\sqrt{\frac{GMm}{F}}$

Ans:

11. The sum of a number and twice its square is 55. Which of the following is correct Equation.

a) $x+(2x)^2=55$ b) $x+2x^2-55=0$ c) $x+2x^2=55$ d) $x+2x^2=55$

Ans:

12. If m and n are the roots of the equation $x^2-6x+2=0$ then the value of (m+n) mn is

a) 12 b) 7 c) -12 d) 8

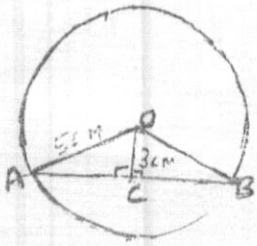
Ans:

13. If one root of the equation $ax^2+bx+c=0$ is the reciprocal of the other, then

a) a=b b) a=c c) b=c d) c=0

Ans:

14. In the given figure, the length of the chord AB in cms is



a) 5 b) 4 c) 8 d) 16

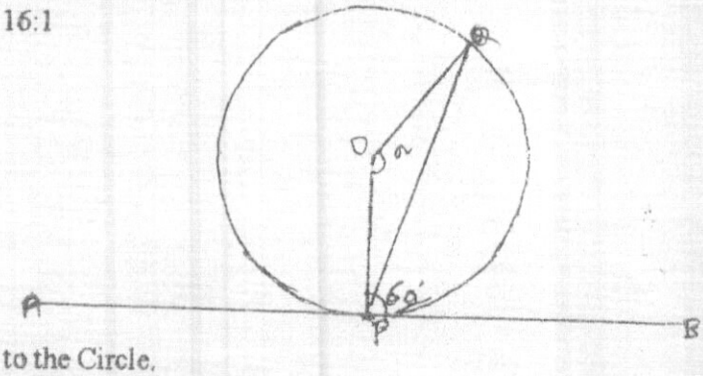
Ans:

15. ABC and DEF are similar triangles
The perimeters are 12 cms and 24 cms respectively. Then the Ratio of areas of ABC and DEF is

a) 1:4 b) 4:1 c) 1:16 d) 16:1

Ans:

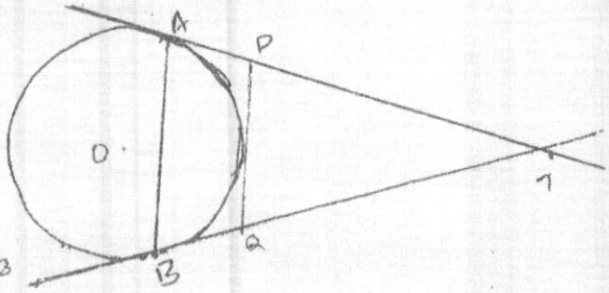
16. In the given figure APB is a tangent at p.
If QPB = 60 then POQ



a) 30° b) 60° c) 90° d) 120°

Ans:

17. In the given figure AT, BT and PQ are the tangents to the Circle.
The perimeter of the triangle TPQ=25cms then the length of tangent AT is



a) 12.5 cms b) 1.25cms c) 25cms d) 50cms

Ans:

18. Te formula to find the volume of hemisphere is

a) 2/3 πr^2 b) 4/3 πr^3 c) 3/2 πr^3 d) 2/3 πr^3

Ans:

19. A cylinder and a cone have the same radius and height. If the volume of cylinder is 81CC. the volume of cone is

a) 3cc b) 9cc c) 27cc d) 81cc

Ans:

20. In a matrix, the sum of the elements is equal to 12, then the number of area is the graph is

a) 0 b) 6 c) 12 d) 2u

Ans:

II **OBJECTIVE TYPE QUESTIONS:**

FILL IN THE BLANKS

21. In the series 1+0.1+0.01+ +(0.1)9 the number of terms is _____

22. If x,y,z are is H.P. then y=_____

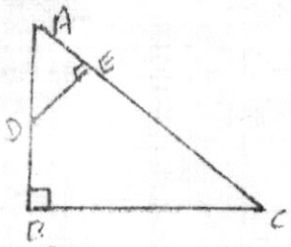
23. If $\begin{bmatrix} 3x & 1 \\ 3 & 2 \end{bmatrix} + \begin{bmatrix} 4 & 5 \\ 2 & 7 \end{bmatrix} = \begin{bmatrix} 8 & 6 \\ 5 & 9 \end{bmatrix}$

Then the value of x is _____

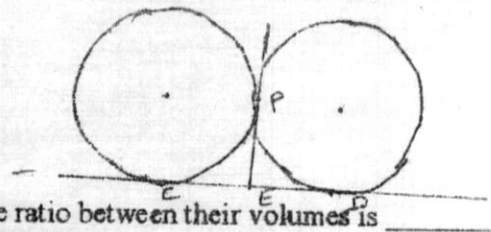
24. The square root variance of distribution of given scores can be termed as _____

25. In the H.C.F of two expressions by division method, the last remainder is a constant and not zero, then the H.C.F of two expressions is _____

26. In $\triangle$ ABC, ABC=90° DE$\perp$AC, Name the angle corresponding to $\angle$ADE



27. PE and CD are the common tangents to two touching circles as shown in the figure of PE =5cms CD is equal to _____



28. The radii to two spheres are the ratio 2:3 then the ratio between their volumes is _____

29. Define 'Cyclic Symmetry'.

30. State the 'Converse of Pythagoras theorem'.

III TWO MARKS QUESTIONS 2X18=36

31. If set A={1,2} set B={2,3,5} and set C={2,3,6,8} then find (AuB)n(Auc)
Ans:

32. In a school of 700 students 300 offer science and 473 offer mathematics and 173 offer both science and mathematics. Represent this through Venn Diagram.
Ans:

33. The first term of a GP is 50 and 4th term is 1350. Find its 5th term.
Ans:

34. In a HP the 4th term is 1/9 and 13th term is 1/27 Write the harmonic progression.
Ans:

35. If A= $\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ B= $\begin{bmatrix} 2 & 0 \\ 1 & 3 \end{bmatrix}$ Find AXB
Ans:

36. a) State fundamental counting Principle.
b) Write the meaning of npr.
Ans:

37. What is the order and radicand of the surd $3\sqrt[x]{P}$
Ans:

38. Simplify by rationalizing the denominator. $\frac{3\sqrt{\ }}{\sqrt{6}-\sqrt{3}}$
Ans:

39. Solve using formula: x + 7x+12=0
Ans:

40. The perimeter of a rectangular field is 54 mts and its area is 180 sq.mts. find the length and breadth of the field.
Ans:

41. Solve: $\frac{x}{5} - \frac{2}{x} = \frac{9}{5}$

42 Find the value of 'm' so that the product of the roots of the equation. $mx^2 - 5x + (3+m) = 0$ is 4

43. a) Find the sum $(3 \oplus_7 6) \oplus_7$ 4
b) Find the product $(4 \otimes_{11} 3) \otimes_{11}$ 7

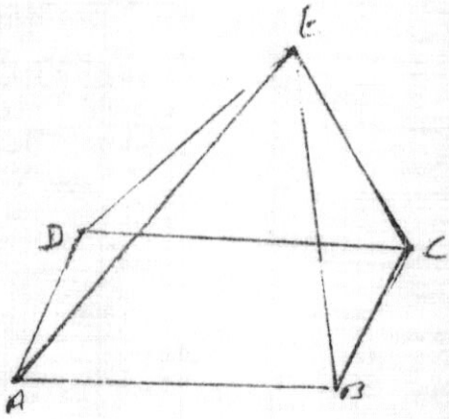
44. Construct two tangents to a circle of radius 3cms from a point 7 cms away from the centre.

45. The height of water level is a cylinder is 7mts. And its diameter is 10 mts. Calculate the volume of water stored is the cylinder.

46. Draw a plan from the following data. Scale 25cms =1 cms.

	To D in mts	
To E 100- - - - - - -	250 150- - - - - -	- - 100 to C
	100 050- - - - - -	-50 to B.
	From A.	

47. Verify Eulers formular for the polyhedron given below:
F+V=E+2



48. Draw the graph for the matrix. $\begin{bmatrix} 2 & 1 & 0 \\ 1 & 4 & 1 \\ 0 & 1 & 2 \end{bmatrix}$

IV **THREE MARKS QUESTIONS:** **3X6=18**

49. From 8 Gentlemen and 5 ladies a committee of 6 is to be formed. In how many ways can this can be done so that the committee contains at least 3 Ladies.

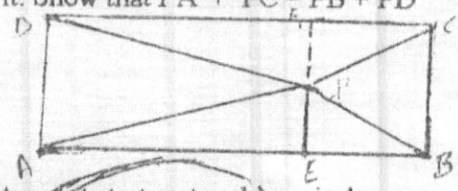
50. Calculate the standard deviation using the following frequency distribution table.

CI	1-5	6-10	11-15	16-20
f	2	3	4	1

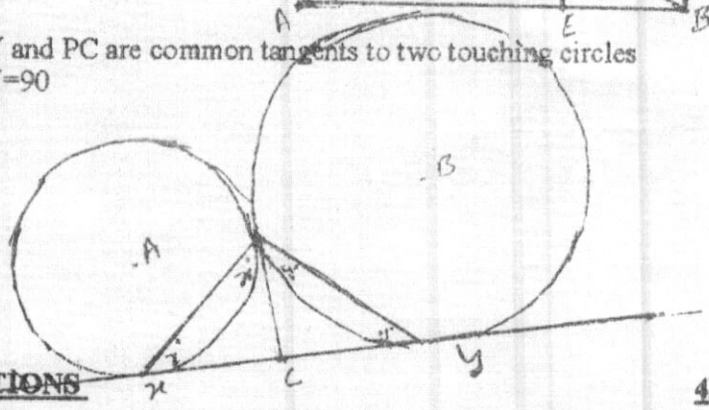
51. Find the L.C.M by division method $x^3-3x^2-10x+24$ and $x^3-3x^2-9x+18$

52. If $x-\frac{1}{x}=4$ show that $x^2+4x^2+\frac{4}{x^2}=148$

53. ABCD is a rectangle and P is a point inside it. Show that $PA^2 + PC^2 = PB^2 + PD^2$



54. In the given figure XY and PC are common tangents to two touching circles
Prove that XPY=90



V **FOUR MARKS QUESTIONS** **4X4=16**

55. In sum of 6 terms which form an AP is 345. The difference of the first and last term is 55. Find the six terms.

56. Draw the graph of Y=X and Y=2X+3 and hence solve the equation X - 2x-3+0

57. Construct a TCT to two circles of radii 4 cms and 2 cms. Whose centres are 10 cms apart. Measure the length of the tangent and verify by calculation.

58. The areas of similar triangles ae proportional to the squares of the corresponding sides. Prove.

~*~*~*~

UÀtÂvÀ ªÀiÁzÀj I Mathematics Question paper Model I

1) UtU¼ ¸AAiÆÃUªÀ bÃz£z ªÄÃ¯ «¨ÁdPv ºÆA¢z. Ez£Ä ¸Æa¸Äª ¸A§Az
Union of sets is distributive over intersection is represented by
A) (AUB)$\cap$(AUC) B)(AUB)$\cap$(A$\cap$C) C) (AUB)$\cap$(BUC) D) (A$\cap$B)U(A$\cap$C)

2) ªÆz® ¥z ªÄvÄ ¸ÁªiÁ£Ä ªÀvÁ¸ a ªÄvÄ d DVgÀª ¸ªiÁAvg ±ÃæAiÄ ¸ÁªiÁ£Ä gÆ¥
The general form of AP with first term 'a' and common difference 'd' is
A) a, a - d, a + d, -------- B) a , ad , 2ad , --------
C) a, a+ d, a + 2d, ------- D) a, ad, ad^2, ---

3) MAzÄ ¸ªiÁgA¨z°gÀª ªÄº¤ÃAiÄgÄ ¥g¸Àg PÊ PÄ®ÄQzÁU MlÄ 4950 PÊ PÄ®ÄPÄU¼Ázg ¸ªiÁgA¨z° ºÁdjzÀªg ¸ASÉ
In a function people greet themselves with shake hands. If the number of shake hands is 4950, then people present there are ------
A) 120 B) 110 C) 100 D) 90

4) JgqÄ ¥ÆuÁðAPU¼ ®¸ÁCªÀ ªÄ¸ÁCz JAlg¶z. CªÀU¼ UÄt®§Ü 128 Dzg ªÄ¸ÁC ªÄvÄ ®¸ÁCªÀ PæªÁV
The LCM Of two numbers is 8 times their HCF. If their product is 128 then HCF and LCM are
A) 2 , 16 B) 3 , 18 C) 4 , 32 D) 5 , 40

5) F P¼V£ªÀU¼° AiiÁªÀzÄ AiiÁªÁU®Æ C¸vÀ?
Which one of the following is incorrect ?
A) $\frac{H}{B} = \frac{A}{L}$ B) $\frac{L}{A} = \frac{B}{H}$ C) $\frac{A}{L} = \frac{H}{B}$ D) $\frac{A}{L} = \frac{B}{H}$

6) $p^2 + q^2 + r^2 - pq - qr - pr$ £Ä Σ ¸APÃv §¼¹ §gzÁU
When $p^2 + q^2 + r^2 - pq - qr - pr$ is written using Σ notation we get ————-
A) $\Sigma\ p^2 - pq$ B) $p^2 + \Sigma\ pq$ C) $\Sigma\ p(p-q)$ D) $\Sigma\ q\ (p-q)$

7) $a + b + c = 2s$ DzÁUÀ $a + b - c$ AiÀÄ ¨É¯É
If $a + b + c = 2s$ then the value of $a + b - c$ is
A) 0 B) 2s C) 2s – c D) 2 (s – c)

8) EªÀÅUÀ¼À° CvÀåAvÀ zÉÆqÀzÀÄ ______
Which one among these is the biggest ?
A) $\sqrt{3}$ B) $\sqrt[3]{3}$ C) $\sqrt[4]{10}$ D) $\sqrt{2}$

9) K = ½ mv^2 DzÁUÀ ‘ v ‘ AiÀÄÄ ¨É¯ÉAiÀÄÄ

If K = ½ mv^2 then the value of ‘ v ‘ is

A) $\pm\sqrt{\frac{K}{2m}}$ B) $\pm\sqrt{\frac{K}{½\,m}}$ C) $\pm\sqrt{\frac{2m}{K}}$ D) $\pm\sqrt{\frac{m}{2K}}$

10) ax^2 + bx + c = 0 AiÀÄÄ MAzÀÄ ±ÀÄzÀ ªÀUÀð ¸À«ÄÃPÀgÀ t ªÁzÁUÀ

If ax^2 + bx + c = 0 is a pure quadratic equation, then ————-

A) a = 0 B) b = 0 C) c = 0 D) a + b +c = 0

11) p & q UÀ¼ÀÄ 2a^2 – 4a + 1 = 0 AiÀÄ ªÀÄÄÆ®UÀ¼ÁzÁUÀ (p + q) ^{2} + 4pq £À ¨É¯É

If p & q are the roots of 2a^2 – 4a + 1 = 0 , then the value of (p + q) ^{2} + 4pq is

A) 2 B) 4 C) 6 D) 8

12) 5x^2 + 13x + k = 0 AiÀÄ MAzÀÄ ªÀÄÄÆ®ªÀ¼ E£ÉÆÃAzÀgÀ ªÀåvÀªÀÄPÉ ¸ÀªÀÄ£ÁVzÀgÉ ‘ k ‘ AiÀÄ ¨É¯É

If one root of 5x^2 + 13x + k = 0 is equal to the reciprocal of the other, then the value of ‘k’ is

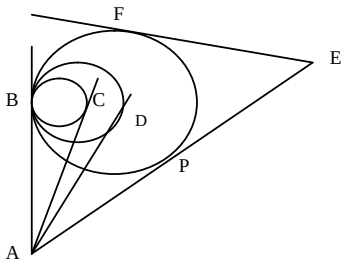
A) 0 B) – 6 C) 5 D) 6

13) avÀzÀ°£À ¸ÀªÀÄ ¸À±ÀðPÀUÀ¼ÀÄ

In the figure equal tangents are

A) AP & AE B) AD & AE

C) AC & AP D) AB & AE



14) 1.4«ÄÃ JvÀgÀ«gÀÄªÀ ºÀÄqÀÄUÀ£À £ÉgÀ½£À GzÀ 1.2«ÄÃ EzÉ. CzÉÃ ¸ÀªÀÄAiÀÄzÀ° MOzÀÄ PÀ l qÀzÀ £ÉgÀ¼ÀÄ 5.4 «ÄÃ GzÀ«zÀgÉ D PÀ l qÀzÀ JvÀgÀªÀ¼

If the shadow of a boy with height 1.4 m is 1.2m then the height of a building which cast a shadow of 5.4 m at the same time is

A) 6.1 m B) 6.3 m C) 7 m D) 6 m

15) 6 ¸ÉA.«ÄÃ, 8¸ÉA.«ÄÃ, 10 ¸ÉA.«ÄÃ ªÁå¸ÀªÀ¼À A, B & C PÉÃAzÀ«gÀÄªÀ ªÀÄÄÆgÀÄ ªÀÉvÀUÀ¼ÀÄ ¥ÀgÀ¸ÀgÀ ¨ÁºÀåªÁV ¸À²ð¸ÀÄvÀzÉ. ºÁUÁzÀgÉ ΔABC AiÀÄ ¸ÀÄvÀ¼ÀvÉ

If three circles of diameter 6cm, 8cm & 10 cm with centres A, B & C touch externally. Then the perimeter of the Δ ABC obtained by joining these points is

A) 12cm B) 24cm C) 36cm D) 48cm

16) MAzÀÄ ªÀÉvÀzÀ ªÁå¸À ªÀÄÄvÀÄ ªÀÉvÀ PÀA¸ÀUÀ¼À £ÀqÀÄªÉ ¹Ã«ÄvÀªÁzÀ PÉÃvÀªÀ¼

The space between Diameter and arc of a circle is

A) ªÀÉvÀ RAqÀ B) ®WÀÄ ªÀÉvÀRAqÀ C) C¢PÀ ªÀÉvÀRAqÀ D) CzÀð ªÀÉvÀRAqÀ

A) Segment B) Minorsegment C) Major segment D) Semi segment

17) MAzÀÄ ¸ÀA¨ÁPÀÉwAiÀÄ L¸ïQÃªÀïï PÀ¦£À JvÀgÀ 4 ಸೆಂ.ಮೀ . ಇದರ ಬದಲಿಗೆ ಬಳಸಬಹುದಾದ ಅಷ್ಟೇ ತ್ರಿಜ್ಯವಿರುವ £ÉÃgÀ ±ÀAPÀÄ«£À JvÀgÀªÀ¼

Height of a cylindrical ice cream cup is 4cm. If a cone of same radius is used , then its height is

A) $^4/_3$ cm B) 2cm C) 8cm D) 12cm

18) MAzÀÄ UÉÆÃ¼ÀzÀ ªÉÄÃ¯ÉãÀÉ «¹Ãtð ªÀÄ 616 ZÀ.¸ÉA.«ÄÃ ºÁUÁzÀgÉ CzÀgÀ ªÁå¸À

If the surface area of a sphere is 616 sq.cm then its diameter is

A) 7cm B) 7.5cm C) 14cm D) 14.2cm

19) F PÉ¼ÀV£ÀªÀÄUÀ¼À° AiÀÄÁªÀÄzÀÄ ¥ÉmÉÆÃ¤PÏ WÀ£ÁPÀÄwAiÀÄ®?

Which one of the following is not a Platonic solid ?

A) ZÀvÀÄªÀÄÄðR WÀ£À B) zÁzÀ±ÀªÀÄÄR WÀ£À C) zÀ±ÀªÀÄÄR WÀ£À D) ಷಣ್ಮುಖ ಘನ

A) tetrahedron B) Dodecahedron C) decahedron D) Hexahedron

20) £Á®Ä PÀªÀiÁUÀvÀ ¸ÀASÉåUÀ¼ÀÄ ¸ÀªÀiÁAvÀgÀ ±ÉÃrAiÀÄ°ªÉ. CªÀUÀ¼À ªÉÆvÀ 20 ºÁUÀÆ ªÀUÀðUÀ¼À ªÉÆvÀ 120 DzÀgÉ D ¸ÀASÉåUÀ¼ÀÄ

Four numbers are in AP. If their sum is 20 and sum of their squares is 120 then the numbers are

A) 1,4,7,9 B) 3,5,7,9 C) 2,4,6,8 D) 2,4,8,12

21) MAzÀÄ ºÀgÁvÀäPÀ ±ÉÃrAiÀÄ° $T_7 = {}^1/_{10}$ & $T_8 = {}^1/_{15}$ DzÁUÀ T_{10} gÀ ¨É¯É K£ÀÄ ?

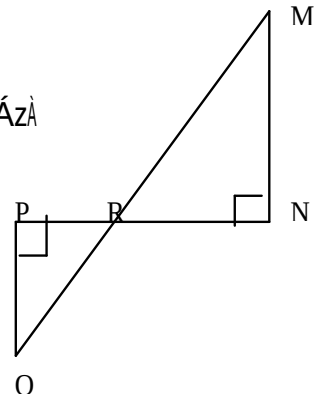
In an HP if $T_7 = {}^1/_{10}$ & $T_8 = {}^1/_{15}$ then find the value of T_{10}

22) $A = \begin{pmatrix} 0 & 5 \\ x+1 & 0 \end{pmatrix}$ ಒಂದು ವಿಷಮ ಸಮಮಿತಿ ಮಾತೃಕೆಯಾದಾಗ 'x' ನ ಬೆಲೆ ಎಷ್ಟು?

If $A = \begin{pmatrix} 0 & 5 \\ x+1 & 0 \end{pmatrix}$ is a skew symmetric matrix, then the value of 'x' is

23) «ZÀ®£É PÀAqÀÄ» rAiÀÄÄªÀ ¸ÀÆvÀ ¨ÉgÉ.

Write the formula to find the deviation



24) ªÀÄ¸ÁCªÀ£ÀÄß PÀAqÀÄ» rAiÀÄÄªÁUÀ $2a^2 + a^3 + 1 + a$ AiÀÄ£ÀÄß §gÉzÀÄPÉÆ¼À¨ÉÃPÁzÀ ¸Àj AiÀiÁzÀ PÀªÀÄ AiÀiÁªÀÄzÀÄ?

The order in which $2a^2 + a^3 + 1 + a$ is to be written while calculating HCF is

25) avÀzÀ° ΔPQR III ΔN MR DzÁUÀ C£ÀÄgÀÆ¥À ¨ÁºÀÄUÀ¼À C£ÀÄ¥ÁvÀ §gÉ.

If then write the ratio between its corresponding sides.

26) ¨ÁºÀÄUÀ¼ÀÄ PÀªÀÄªÁV 3,4,5 DVgÀÄªÀ ΔABC AiÀÄ° ∠B = 90° DVzÀgÉ «PÀtðªÀÅ

If the sides of a triangle ΔABC are 3 , 4 , 5 with ∠B = 90° then its hypotenuse is ———

27) A BCD ZÀvÀÄ¨ÀÄðdzÀ ¨ÁºÀÄUÀ¼ÀÄ O PÉÃAzÀªÀ¼À ªÀÄvÀPÉ J¼ÉzÀ ¸À±ÀðPÀUÀ¼ÁVªÉ. AB = 8cm & CD = 5cm DzÀgÉ AD + BC ಯ ಬೆಲೆ ಎಷ್ಟು?

The sides of a quadrilateral ABCD are the tangents to a circle with centre O. If AB = 8cm and CD = 5cm then find AD + BC

28) wdå h ªÀvÀ JvÀgÀ r ಆಗಿರುವ ನೇರ ಶಂಕುವಿನ ಘನಫಲವೆಷ್ಟು?
write the formula to find the volume of a cone with radius ‘h’ and height ‘ r ‘

29) «¸À j ¹ ¸ÀAPÉÃ¦ ¹. : $\Sigma x^2 + 2 \Sigma yz$
Expand and simplify : $\Sigma x^2 + 2 \Sigma yz$

30) A = $\begin{pmatrix} 3 & 4 \\ 5 & 6 \end{pmatrix}$ ªÀÄvÀÄ B = $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ DzÁUÀ A + 2B PÀAqÀÄ» r.
If A = $\begin{pmatrix} 3 & 4 \\ 5 & 6 \end{pmatrix}$ and B = $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ then find A + 2B

31) 60 «zÁåyðUÀ¼À° 48 «zÁåyðUÀ¼ÀÄ vÉÆÃ¨Á®£ÀÄß 27 «zÁåyUÀ¼ÀÄ ªÁ°¨Á®£ÀÄß DqÀÄvÁgÉ. E£ÀÆß ಕೆಲವರು ಎರಡೂ ಆಟವನ್ನು ಆಡುತ್ತಾರೆ. ಹಾಗಾದರೆ ತ್ರೋಬಾಲ್ ಮಾತ್ರ ಆಡುವವರ ಸಂಖ್ಯೆ ಎಷ್ಟು?
Among 60 students 48 play throw ball and 27 play volley ball. If some of them play both, find the number of students who play only throw ball.

32) U = { 0,1,2,3,4,5,6,7,8} A = { 2 gÀ UÀÄt PÀUÀ¼ÀÄ } B = { 3 gÀ C¥À ªÀvÀåðUÀ¼ÀÄ } DzÁUÀ $(AUB)^1$ PÀAqÀÄ » r zÀÄ ªÉ£À£ÀPÉ gÀa ¹.
If U = { 0,1,2,3,4,5,6,7,8} A = { Multiples of 2} B = { factors of 6 } Then find $(AUB)^1$ and represent it in Venn diagram.

33) ¸À ªÀiÁAvÀgÀ ±ÉÃ r AiÀÄ 3£ÉÃ¥ÀzÀ 18 ºÁUÀÆ 7£ÉÃ ¥ÀzÀ 30 DzÁUÀ 17 ¥ÀzÀUÀ¼À ªÉÆvÀ PÀAqÀÄ» r.
If the third term and seventh term of an AP are 18 & 30. Find the sum of 17 terms.

34) JgÀqÀÄ ¸ÀASÉåUÀ¼À ¸À ªÀiÁAvÀgÀ ªÀiÁzÀå 5 ºÁUÀÆ UÀÄuÉÆÃvÀgÀ ªÀiÁzÀå 4 DzÀgÉ D ¸ÀASÉåUÀ¼ÀÄ AiÀÄÁªÀ¹ÀÄ?
If the AM and GM of two numbers are 5 and 4. Find the numbers

35) $\begin{pmatrix} 1 & 2 \\ 2 & 5 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$ DzÁUÀ x & y £À ¨É¯É PÀAqÀÄ » r.
If $\begin{pmatrix} 1 & 2 \\ 2 & 5 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$ then find the value of x & y

36) MAzÀÄ GzÁºÀgÀuÉAiÀÄ ªÀÄÆ®PÀ $^nC_r = {}^nC_{n-r}$ JAzÀÄ vÉÆÃj ¹.
With an example show that $^nC_r = {}^nC_{n-r}$

37) ¸ÀAPÉÃ¦ ¹: $\sqrt{50} - \sqrt{98} + \sqrt{162}$
Simplify : $\sqrt{50} - \sqrt{98} + \sqrt{162}$

38) bÉÃzÀ CPÀgÀt ÃPÀj ¹ . ¸ÀAPÉÃ¦ ¹: $\frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$
Rationalize the denominator and simplify: $\frac{\sqrt{3} + \sqrt{2}}{\sqrt{3} - \sqrt{2}}$

39) (x + 6) (x + 2) = x DzÁUÀ ¸À«ÄÃPÀgÀ t zÀ ªÀÄÄÆ®UÀ¼À£ÀÄß PÀAqÀÄ» r ¬Ä j .
Find the roots of the equation ;(x + 6) (x + 2) = x

40) 240 Q.«ÄÃ zÀÆgÀ ¥ÀAiÀÁ t ¸À®Ä MAzÀÄ ªÁºÀ£ÀªÀÅ vÉUÉzÀÄPÉÆ¼ÀÄªÀ PÁ®ªÀÅ CzÀÄ vÀ£ÀÀß ªÉÃUªÀ£ÀÄß 2 Q.«ÄÃ / ಗಂಟೆ ಯಷ್ಟು ಹೆಚ್ಚಿಸಿಕೊಂಡಾಗ ಅರ್ಧಗಂಟೆ ಕಡಿಮೆಯಾಗುತ್ತಿತ್ತು. ಹಾಗಾದರೆ ಆ ವಾಹನದ ವೇಗವೆಷ್ಟು?
If a vehicle increases its speed by 2km/h to its initial speed, it will take half an hour less to travel a distance of 240km. Find its speed.

41) $x^2 + 9 = mx$ £À ªÀÄÄÆ®UÀ¼ÀÄ ¥ÀgÀ¸ÀgÀ ¸ÀªÀÄ£ÁzÀgÉ 'm' £À ¨É¯É PÀAqÀÄ » r .
If the roots of $x^2 + 9 = mx$ are equal, find the value of 'm '

42) ªÀÄÄÆ®UÀ¼ÀÄ (3 + 2 √5) & (3 – 2 √5) DVgÀÄªÀ ªÀUÀð ¸À«ÄÃPÀgÀ t gÀa ¹ .
Construct an quadratic equation with roots (3 + 2 √5) & (3 – 2 √5)

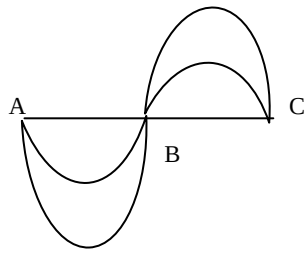
43) Z_4 ನ ಮೇಲೆ ಮಾಡ್ಯೂಲೋ 4 ರ ಗುಣಾಕಾರದ ಕೇಲೇ ಕೋಷ್ಟಕ ರಚಿಸಿ.
Construct Cauley's table on Z_4 modulo 4 under multiplication.

44) ¸À±ÀðPÀUÀ¼À £ÀqÀÄ«£À PÉÆÃ£ÀªÀÅ 65º EgÀÄªÀÀvÉ 3 ¸ÉA.«ÄÃ wdåªÀÅ¼À ªÀÈvÀPÉ ¨ÁºÀå ©AzÀÄ«¤AzÀ ¸À±ÀðPÀUÀ¼À£ÀÄß J¼É¬Ä j .
Construct two tangents to a circle of radius 3cm from an external point with an angle 65º between them.

45) 35 ¸ÉA.«ÄÃ JvÀgÀ«gÀÄªÀ ¹°AqÀgÀ DPÀÈwAiÀÄ ¥ÁvÉAiÀÄ°¹ 11 °Ã l gï ºÁ®£ÀÄß vÀÄA§¯ÁVzÉ. F ¥ÁvÉAiÀÄ ªÁå¸À PÀAqÀÄ» r ¬Ä j .
A cylinder of height 35cm is completely filled with 11 litres of milk. Calculate its diameter.

46) ¸ÀÆPÀ ¥ÀªÀiÁ t DAiÉÄ ªÀiÁr £ÀPÉ J¼É¬Ä j .
Draw the outline using suitable scale :

To C in meters
250
To D 120 210
120 200 to B
To E 80 80
From A



47) F PÉ¼ÀV£À £ÀPÉUÉ DAiÀÄgÀ£À ¸ÀÆvÀ C£À¬Ä¹ vÁ¼É £ÉÆÃr .
¥ÀwAiÉÆAzÀÄ ¸ÀA¥ÁvÀ ©AzÀÄ«£À ªÀUÀð w½¹
Apply Euler's formula to given figure. Write the order of each node.

48) F ªÀiÁvÀÈPÉAiÀÄ£ÀÄß eÁ¯ÁPÀÈwAiÀiÁV ¸ÀÆa¹ .
Draw the network of given matrix.

$$\begin{pmatrix} 0 & 3 & 0 \\ 3 & 0 & 2 \\ 0 & 2 & 0 \end{pmatrix}$$

49) MOBILE ಪದದ ಅಕ್ಷರಗಳಿಂದ ಎಷ್ಟು ಪದಗಳನ್ನು ರಚಿಸಲು ಸಾಧ್ಯ? ಅವುಗಳಲ್ಲಿ ಎಷ್ಟು ಪದಗಳು ¸ÀgÁPÀgÀUÀ½AzÀ DgÀA¨ÀUÉÆ¼ÀÄvÀªÉ?
How many words can be formed using the letters of the word MOBILE ? How many of them begins with vowels ?

50) F PÉ¼ÀV£À ªÀVðPÀÈvÀ ¥Á¥ÁAPÀUÀ¼À ªÀÁ£ÀPÀ «ZÀ®£É PÀAqÀÄ» r ¬Ä j.
Calculate the standard deviation of following data.

ªÀUÁðAvÀgÀ (CI)	1 - 5	6 – 10	11 - 15	16 - 20
DªÀÈw (f)	1	2	3	4

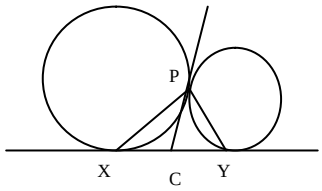
51) 2£ÉÃ WÁvÀzÀ JgÀqÀÄ ©ÃeÉÆÃQUÀ¼À ªÀÄ¸ÁC ªÀÄvÀÄ ®¸ÁC UÀ¼ÀÄ PÀªÀÄªÁV (a – 3) & $(a^3 + a^2 – 17a + 15)$ DVªÉ. D JgÀqÀ£É WÁvÀzÀ ©ÃeÉÆÃQUÀ¼À£ÀÄß PÀAqÀÄ» r ¬Ä j.
The HCF & LCM of two 2nd degree expressions are (a – 3) & $(a^3 + a^2 – 17a + 15)$. Find the expressions.

52) $x + \frac{1}{x} = \sqrt{3}$ DzÁUÀ $x^3 + \frac{1}{x^3}$ ¨É¯É PÀAqÀÄ» r ¬Ä j
If then find the value of

53) M§ ªÀåQAiÀÄÄ vÁ¤gÀÄªÀ ¸À¼À¢AzÀ 8 Q.«ÄÃ GvÀgÀPÉ ZÀ° ¹ C°AzÀ ¥ÀÆªÀðPÉ wgÀÄV 5 Q.«ÄÃ £ÀqÉzÀÄ ªÀÄvÉÆªÉÄà JqÀPÉ wgÀÄV 4 Q.«ÄÃ £ÀqÉzÀÄ £ÀAvÀgÀ ¥ÀÄ£À: JqÀPÉ 10 Q.«ÄÃ £ÀqÉzÀgÉ CªÀ£ÀÄ ºÉÆgÀ I ಸ್ಥಳದಿಂದ ಈರಿರುವ ಸ್ಥಳಕ್ಕೆ ಇರುವ ಕನಿಷ್ಠ ದೂರ ವೆಷ್ಟು?

A man walks 8km due north then 5 km East and turns left then walk 4km and finally turns left and walk 10km. How far is he from starting point ?

54) avÀzÀ° XY & PC UÀ¼ÀÄ ªÀÈvÀPÉ J¼ÉzÀ ¸À±ÀðPÀUÀ¼ÀÄ
∠XPY = 90° JAzÀÄ vÉÆÃj ¹
In the figure, XY & PC are tangents to the circle.
Prove that ∠XPY = 90°



55) MAzÀÄ UÀÄuÉÆÃvÀgÀ ±ÉÃ r AiÀÄ ªÉÆzÀ® ªÀÄÆgÀÄ ¥ÀzÀUÀ¼À ªÉÆvÀPÀÆ ªÉÆzÀ® DgÀÄ ¥ÀzÀUÀ¼À ªÉÆvÀPÀÆ EgÀÄªÀ C£ÀÄ¥ÁvÀ 125:152 DzÀgÉ ¸ÁªÀÁ£Àå C£ÀÄ¥ÁvÀ PÀAqÀÄ » r.
If the ratio between first three terms and first six terms of GP is 125 : 152. Find the common ratio.

56) ¸ÀªÀÄgÀÆ¥ wÃ¨ÀÄdUÀ¼À « ¹Ãt ðUÀ¼ÀÄ CªÀUÀ¼À C£ÀÄgÀÆ¥À ®A¨ÉÆÃ£ÀßwUÀ¼À ªÀUÀðUÀ¼À C£ÀÄ¥ÁvÀzÀ° gÀÄvÀzÉ. J0zÀÄ ¸Á¢¹.
Provet that area of similar triangles are proportional to square of their corresponding altitudes.

57) $x^2 + 2x – 3 = 0$ ¸À«ÄÃPÀgÀ t zÀ £ÀPÉ © r ¹ /Draw the graph of : $x^2 + 2x – 3 = 0$

58) PÉÃAzÀUÀ¼À £ÀqÀÄ«£À CAvÀgÀ 7 ¸ÉA.«ÄÃ ºÁUÀÆ wdåUÀ¼ÀÄ 4.5 ¸ÉA.«ÄÃ ªÀÄvÀÄ 3.5 ¸ÉA.«ÄÃ EgÀÄªÀ JgÀqÀÄ ªÀÈvÀUÀ½UÉ £ÉÃgÀ ¸ÁªÀÁ£Àå ¸À±ÀðPÀUÀ¼À£ÀÄß J¼É¬Ä j.
Draw two circles of radii 4.5cm and 3.5cm with their centres 7cm apart. Construct DCT.

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UÀÀÀÀª ÀÄzÀÀ II Mathematics Question paper Model II

§ºÀÄ DAiÉÄ ¥À±ÉÃUÀ¼ÀÄ:- 1x20

1) n (A) = 4 & n(A^1) = 8 DzÀgÉ «±ÀUÀ t zÀ° gÀÄªÀ UÀuÁA±ÀUÀ¼À ¸ÀASÉå / If n (A) = 4 & n(A^1) = 8 then n(U) is
A) 4 B) 8 C) 12 D) 16

2) $T_n = 3x4^{n-1}$ DzÁUÀ UÀÄuÉÆÃvÀgÀ ±ÉÃ r AiÀÄÄ
Which one of the following are the terms of $T_n = 3x4^{n-1}$
A) 3,12,18 B)3,12,48 C)3,12,24 D)3,12,26

3) $A = \begin{pmatrix} 1 & 2 & 3 \end{pmatrix}$ & $B = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$ DzÀgÉ AB AiÀÄ ±ÉÃ t AiÀÄÄ then order of AB is
A) 1x3 B) 3x1 C) 3x3 D) 1x1

4) ^5P_r = 120 DzÁUÀ r £À ¨É¯É / If ^5P_r = 120 then ‘ r ‘ is
A) 4 B) 5 C) 4 or 5 D) – 5

5) (a^2 – 9) & (a^2 + 6a + 9) EªÀ¼UÀ¼À ªÀÄ.¸Á.C ªÀ¼/ The HCF of (a^2 – 9) & (a^2 + 6a + 9) is
A) a + 3 B) a – 3 C) (a+ 3) (a – 3) D) $(a+ 3)^2$ (a – 3)

6) JgÀqÀÄ ©ÃeÉÆÃQUÀ¼À ªÀÄ.¸Á.C ªÀÄvÀÄ C.¸Á.C UÀ¼ÀÄ PÀªÀÄªÁV $4xy^2$ & $8x^3y^5$ DzÀgÉ D ©ÃeÉÆÃQUÀ¼ÀÄ
The expressions with HCF & LCM as $4xy^2$ & $8x^3y^5$ is
A) $4x^2y^5$ & $8x^3y^2$ B) $4xy^5$ & $8x^3y^2$ C) $4x^2y^5$ & $8xy^2$ D) $4y^5$ & $8y^2$

7) Σ a (a – b + c) £ÀÄß «¸À j ¹ ¸ÀAPÉÃ¦ ¹zÁUÀ §gÀÄªÀ ¨É¯É
When Σ a (a – b + c) is exanded and simplified we get
A) $a^2 + b^2 + c^2$ B) 1 C) ab + bc+ ca D) 0

8) ($x^2 + y^2 + xy$) ªÀÄvÀÄ (x – y) AiÀÄ UÀÄt ®§zÀ ¨É¯É/ The product of ($x^2 + y^2 + xy$) & (x – y) is
A) $(x – y)^3$ B) $(x + y)^3$ C) $x^3 + y^3$ D) $x^3 – y^3$

9) 3√5 & √7 gÀ UÀÄt ®§ ªÀ£ÀÄß WÁvÁAPÀgÀÆ¥ÀzÀ° ªÀåPÀ¥À r ¹zÁUÀ
The product of 3√5 & √7 in the form of index is
A) $3 (35)^{½}$ B) $2 (35)^{½}$ C) $35 (2)^{½}$ D) $2 (35)^{1/3}$

10) ±ÀÄzÀ ªÀUÀð ¸À«ÄÃPÀgÀ t zÀ DzÀ±ÀðgÀÆ¥À/ The standard form of a pure quadratic equation is
A) $ax^2 + bx + c = 0$ B) $ax^2 = -c$ C) ax = – cx D) $ax^2 + bx = 0$

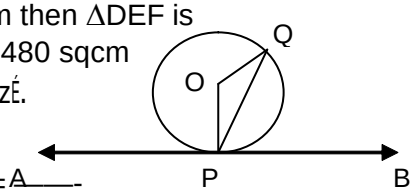
11) $x^2 = 5x$ DzÀgÉ x £À ¨É¯É / If $x^2 = 5x$ then the value of ‘ x ’ are
A) 0 B) 0 & 5 C) 5 D) 0 & - 5

12) (3 ± √2) ªÀÄÄÆ®UÀ¼À£ÀÄß ºÉÆÃ¢gÀÄªÀ ªÀUÀð ¸À«ÄÃPÀgÀt
Quadratic equation with roots (3 ± √2) is
A) $x^2 + 6x – 7 = 0$ B) $x^2 – 6x + 7 =0$ C) $x^2 + 6x – 7 = 0$ D) $x^2 – 6x – 7 = 0$

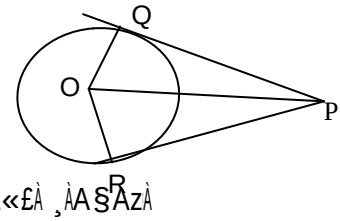
13) ಒಂದು ನಿರ್ದಿಷ್ಟ ವರ್ಗ ಸಮೀಕರಣದ ಪರವಲಯ ಮತ್ತು ಸರಳರೇಖೆಯ ನಕ್ಷೆಯಲ್ಲಿ ಸರಳರೇಖೆಯು (–3,9) ªÀÄvÀÄ (1, 1) ©AzÀÄUÀ¼À° ¥ÀgÀªÀ®AiÀÄªÀ£ÀÄß PÀvÀj ¸ÀÄvÀzÉ. ºÁUÁzÀgÉ D ¸À«ÄÃPÀgÀt
In a graph , straight line intersects the parabola at(–3,9) & (1, 1) Then the equation is
A) x^2–2x+3=0 B) x^2+2x–3=0 C) x^2–3x+2=0 D) x^2–2x–3=0

14) AB & CD eÁåUÀ¼ÀÄ ¥ÀgÀ¸ÀgÀ ¸ÀªÀÄªÁVªÉ. PÉÃAzÀ¢AzÀ eÁå AB UÉ EgÀÄªÀ zÀÆgÀ 3 . 5 ¸ÉA.«ÄÃ DzÀgÉ eÁå AB & CD UÀ¼À £ÀqÀÄ«£À zÀÆgÀ
AB & CD are two equal chords in a circle. If the distance from chord AB to the centre is 3 . 5cm, then distance between AB & CD is
A) 7cm B) 3 . 5cm C) 4 . 5cm D) 7 . 5cm

15) ΔABC III ΔDEF. BC = 2 . 5 ΔABC AiÀÄ «¹Ãtð 120 ZÀ. ¸ÉA.«ÄÃ DzÀgÉ Δ DEF £À «¹Ãtð.
EF 5
ΔABC III ΔDEF; If BC = 2 . 5 and area of ΔABC = 120 sq cm then ΔDEF is
A) 240 sqcm B) 120 sqcm C) 840 sqcm D) 480 sqcm



16) O PÉÃAzÀ«gÀÄªÀ ªÀÉvÀPÉ APB AiÀÄÄ P ©AzÀÄ«¤AzÀ J¼ÉzÀ ¸À±ÀðPÀªÁVzÉ.
QPB = 60° DzÀgÉ ∠PQO = ——
In the figure, APB is a tangent. If ∠QPB = 60° then ∠PQO =
A) 60° B) 30° C) 90° D) 120°

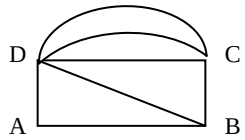


17) avÀzÀ° PQ &PR ¸À±ÀðPÀUÀ¼ÀÄ ∠QPR = 50° DzÀgÉ ∠QOP C¼ÀvÉ
In the adjoining figure, PQ & PT are tangents.
If ∠QPR = 50° then ∠QOP is ——
A) 50° B) 65° C) 80° D) 130°

18) MAzÉÃ wdå ªÀÄÄvÀÄ JvÀgÀ«gÀÄªÀ ±ÀAPÀÄ ªÀÄÄvÀÄ ¹°AqÀgï UÀ¼À WÀ£À¥À®UÀ¼À £ÀqÀÄ«£À ¸ÀASÃAzÀ
Relation between a cone and a cylinder with same radius and height is
A) ±ÀAPÀÄ =¹°AqÀgï B) 3±ÀAPÀÄ =¹°AqÀgï C) ±ÀAPÀÄ =3¹°AqÀgï D) J®ªÀÇ ¸Àj
A) cone = cylinder B) 3 cone = cylinder C) cone =3 cylinder D) All the above

19) MAzÀÄ gÉÆÃ®gï£À ¥ÁzÀzÀ ªÉÄÃ¯É «¹Ãtð 5 ZÀ.«ÄÃ EzÉ. CzÀÄ 1000 ZÀ.«ÄÃ .«¹Ãtðª¼À MAzÀÄ ªÉÄÉzÁ£ÀªÀ£ÀÄß ¥ÀÆwð PÀ«Ä¸À®Ä vÉUÉzÀÄPÉÆ¼ÀªÀ ¸ÀÄvÀÄUÀ¼À ¸ÀASÉå
The lateral surface area of a roller is 5sqm. Find the number of revolutions that it does to cover a feild of 000 sqm
A) 100 B) 200 C) 50 D) 500

20) F eÁ¯ÁPÀÉwAiÀÄ ¨É¸À¸ÀA¥ÁvÀ ©AzÀÄUÀ¼ÀÄ
In the figure, number of odd nodes is ——
A) 3 B) 2 C) 1 D) 0



II 21) ªÉÄÆzÀ® ¥ÀzÀ ‘ a ‘ ¸ÁªÀÁ£Àå C£ÀÄ¥ÁvÀ ‘ r ‘ DzÁUÀ S∞ AiÀÄ ¨É¯É 1x10

If a & r are the first term and common ratio then S∞ is

22) 2 ªÀÄvÀÄ 8 gÀ ¸ÀªÀÁAvÀgÀ ªÀÁzÀå PÀAqÀÄ» r ¬Ä j ./ Find the AM between 2 & 8

23) $M = \begin{pmatrix} 5 & 6 \\ -1 & 2 \end{pmatrix}$ DzÀgÉ M – M ^{1} £À ¨É¯É

find M – M ^{1}

24) zÀvÁA±ÀUÀ¼À ªÀÁ¦ð£À UÀÄuÁAPÀ PÀAqÀÄ» r AiÀÄÄªÀ ¸ÀÆvÀ

Write the formula to find the coefficient of Variation.

25) (6x – 12) & (6x^{2} – 24) ಗಳ ಲ.ಸಾ.ಅ ಎಷ್ಟು?

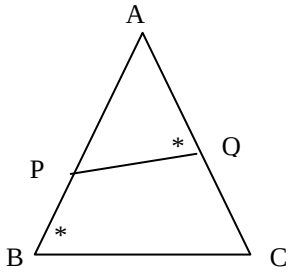
Find the LCM of (6x – 12) & (6x^{2} – 24)

26) Σ m = 0 DzÀgÉ $\frac{(n+p)}{m}\left(\frac{p}{m+n}\right)$ £À ¨É¯É

Find the value of If Σ m = 0

27) avÀzÀ ¸ÀºÁAiÀÄ¢AzÀ ¥ÀÆ t ð ªÀÁr j .

Fill in the blank with suitable answer based on given figure.



$\frac{AB}{AC} = \frac{AQ}{\square}$

28) DAiÀÄvÀzÀ PÀ t ðªÀÅ 17 ¸ÉA.«ÄÃ CzÀgÀ MAzÀÄ ¨ÁºÀÄ 15 ¸ÉA.«ÄÃ EzÀgÉ ªÀÄvÉÆAzÀÄ ¨ÁºÀÄ«£À C¼ÀvÉ

Calculate the bredth of a rectangle whose length and diagonal are 17cm ansd 15cm.

29) JgÀqÀÄ w¨ÀÄdUÀ¼ÀÄ ¸ÀªÀÄPÉÆÃ¤ÃAiÀÄUÀ¼ÁzÀgÉ, CªÀÅUÀ¼À C£ÀÄgÀÆ¥À ¨ÁºÀÄUÀ¼ÀÄ

If two triangles are equiangular, then their corresponding sides are ——-

30). CzÀðUÉÆÃ¼ÀzÀ ¥Á±Àð ªÉÄÃ¯É¢ÃÉ « ¹Ã t ð PÀAqÀÄ» r AiÀÄÄªÀ ¸ÀÆvÀ

Write the formula to find the lateral surface area of hemisphere.

III. 31)A = { 3,4,5,6,7} , B = { 4,5,6,8} & C = { 5,6,7,8} DzÀgÉ A∩(BUC) AiÀÄ£ÀÄß ªÉ£ï £ÀPÉAiÀÄ ªÀÄÆ®PÀ vÉÆÃj ¹. 2x16

Draw the Venn diagram of A∩(BUC). Given A = { 3,4,5,6,7} , B = { 4,5,6,8} & C = { 5,6,7,8}

32) ಶಾಲೆಯ ವಾರ್ಷಿಕೋತ್ಸವ ಕಾರ್ಯಕ್ರಮದಲ್ಲಿ ಶೇ 60 ರಷ್ಟು ವಿದ್ಯಾರ್ಥಿಗಳು ನೃತ್ಯದಲ್ಲಿ ಭಾಗವಹಿಸುತ್ತಾರೆ. ಶೇ 25 ರಷ್ಟು «zÁåyðUÀ¼ÀÄ £Á l PÀ ªÀÄvÀÄ £ÀÉvÀå JgÀqÀÆ PÁAiÀÄðPÀªÀÄUÀ¼À° ¨ÁUÀªÀ»¸ÀÄvÁgÉ. ºÁUÁzÀgÉ £Á l PÀzÀ° ªÀÁvÀ ¨ÁUÀªÀ»¸ÀÄªÀgÀ ¸ÀASÉå PÀAqÀÄ» r ¬Ä j .

In a school day program 60% students participate in dance, 25% in drama and dance. Find the percentage of students who participate in drama only.

33) MAzÀÄ ºÀgÁvÀäPÀ ±ÉÃ r AiÀÄ° $T_3 = {}^{2}/_{17}$ & $T_1 = {}^{2}/_{9}$ DzÀgÉ T_{10} £ÀÄß PÀAqÀÄ» r ¬Ä j .

If $T_3 = {}^{2}/_{17}$ & $T_1 = {}^{2}/_{9}$ then find T_{10} of HP

34) MAzÀÄ ªÉÄÃf £À ªÉÄÃ¯É 7 ¥ÉnUÉUÀ½ªÉ. QgÀ t £ÀÄ ªÉÆzÀ®£ÉÃ ¥ÉnUÉAiÀÄ° 2 UÉÆÃ° UÀ¼ÀÄ, JgÀqÀ£ÉÃ ¥ÉnUÉAiÀÄ° 4 UÉÆÃ° UÀ¼ÀÄ ªÀÄvÀÄ ªÀÄÆgÀ£ÉÃ ¥ÉnUÉAiÀÄ° 8 UÉÆÃ° UÀ¼ÀÄ »ÃUÉ ºÉa¸ÀÄvÁ ºÉÆÃzÀgÉ J¯Á ¥ÉnUÉUÀ¼À° ºÁQzÀ ಗೋಲಿಗಳ ಒಟ್ಟು ಸಂಖ್ಯೆ ಎಷ್ಟು?

7 boxes are kept on a table. Kran put one marble in first box, 2 in II box, 4 in III box and so on. Find the total number of marble that are required to keep in boxes with same order.

35) $A = \begin{pmatrix} 2 & 1 \\ 3 & 0 \end{pmatrix}$ DzÀgÉ A^{2} + A PÀAqÀÄ » r ¬Ä j .

then find A^{2} + A

36) 4 ಕುರ್ಚಿಗಳಲ್ಲಿ 5 ಜನರು ಎಷ್ಟು ವಿಧಗಳಲ್ಲಿ ಕುಳಿತುಕೊಳ್ಳಬಹುದು?
In how many ways 5 people can be seated in 4 chairs.

37) $(2\sqrt{x} - \sqrt{y})$ £ÀÄß $(3\sqrt{x} + 4\sqrt{y})$ ¤AzÀ PÀ¼É¬Ä j.
Subtract $(2\sqrt{x} - \sqrt{y})$ from $(3\sqrt{x} + 4\sqrt{y})$

38) $\frac{5\sqrt{3}}{\sqrt{10} - \sqrt{5}}$ bÉÃzÀªÀ£ÀÄß CPÀgÀt ÃPÀgÀt UÉÆ½¹ ¸ÀAPÉÃ¦¹
Rationalize the denominator and simplify.

39) MAzÀÄ DAiÀÄvÁPÁgÀzÀ ºÉÆ®zÀ ¸ÀÄvÀ¼ÀvÉ 54 ¸ÉA.«ÄÃ CzÀgÀ «¹Ãtð 180 ZÀ.¸ÉA.«ÄÃ DzÀgÉ ºÉÆ®zÀ GzÀ ªÀÄvÀÄ CUÀ® PÀAqÀÄ »r¬Ä j.
The perimeter and area of a rectangular field are 54 cm and 180 sq cm, Find its length & bredth.

40) $(m + 8)^2 - 5 = 31$ ¸À«ÄÃPÀgÀt ªÀ£ÀÄß ©r¹.
Solve for ‘ m ‘ : $(m + 8)^2 - 5 = 31$

41) $x + \frac{6}{x} = 5$ DzÀgÉ ‘ x ‘ £ÀÄß ©r¹
find ‘ x ‘

42) $2m^2 - 4m + 1 = 0$ ¸À«ÄÃPÀgÀt zÀ ªÀÄÆ®UÀ¼ÀÄ a & b UÀ¼ÁzÁUÀ $\frac{1}{a^2} + \frac{1}{b^2}$ PÀAqÀÄ»r¬Ä j.
If a & b are the roots of $2m^2 - 4m + 1 = 0$ the find the value of $\frac{1}{a^2} + \frac{1}{b^2}$

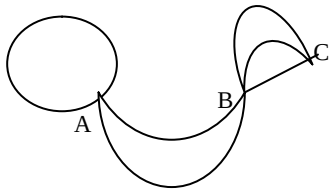
43) F ºÉÃ½PÉ ¸À j AiÉÄÃ? vÀ¥É? PÁgÀt PÉÆr / Say true or false and give reason:
a) $9 \cong 23 \pmod{12}$
b) What is the value of $(6 \oplus_7 3)$ ರ ಬೆಲೆ ಎಷ್ಟು?

44) 3 ¸ÉA.«ÄÃ wdå«gÀÄªÀ ªÀÄvÀzÀ° 4.5 ¸ÉA.«ÄÃ eÁå gÀa¹, eÁåzÀ CAvÀå©AzÀÄUÀ¼À° ¸À±ÀðPÀUÀ¼À£ÀÄß gÀa¹j.
Draw a circle of radius 3cm and construct tangents at the end points of a chord of length 4.5cm

45) MAzÀÄ ±ÀAPÀÄ«£À WÀ£À¥À® 616 WÀ. .¸ÉA.«ÄÃ ¥ÁzÀzÀ «¹Ãtð 154 ZÀ. .¸ÉA.«ÄÃ DzÀgÉ JvÀgÀ PÀAqÀÄ »r¬Ä j.
Volume of a cone is 616 sqcm. If the area of its base is 154 sqcm, find its height.

46) ¸ÀÆPÀ ¥ÀªÀÁtzÉÆA¢UÉ PÉ¼ÀV£À C¼ÀvÉUÉ C£ÀÄ¸ÁgÀªÁV d«ÄÃ¤£À £ÀPÉ gÀa¹j.
Draw the outline using suitable scale.

D UÉ «ÄÃlgï UÀ¼À° /To in meters
100
C UÉ 30 80
B UÉ 40 30
A ¬ÄAzÀ /from



47) eÁ¯ÁPÀëwUÉ ¸ÀA§A¢¹zÀ ªÀÁvÀëPÉ gÀa¹j.
Write the matrix for the following graph.

48) w¨ÀÄd¥ÁzÀ ¥ÀlPÀzÀ PÀZÁ £ÀPÉ gÀa¹, DAiÀÄgÀ£À ¸ÀÆvÀ C£À¬Ä¹ vÁ¼É £ÉÆÃr.
Draw the triangle based prism and apply the Euler’s formula.

49) MAzÀÄ ¥ÉnUÉAiÀÄ° 4¤Ã° ªÀÄvÀÄ 5 PÉA¥ÀÄ §tzÀ UÉÆÃ°UÀ½ªÉ. ¥ÉnUÉ¬ÄAzÀ vÉUÉAiÀÄªÀ 6 UÉÆÃ°UÀ¼° ªÀÄÆgÀÄ ನೀಲಿ ಗೋಲಿಗಳಿರುವಂತೆ ಎಷ್ಟು ವಿಧಗಳಲ್ಲಿ ಗೋಲಿಗಳನ್ನು ಹೊರತೆಗೆಯಬಹುದು? 3x6
A box contains 4 blue and 5 red marbles. I n how many ways 6 marbles can be drawn so taht 3 of them are blue ?

50) F PÉ¼ÀUÉ PÉÆnÖgÀÄªÀ «ªÀgÀuÉAiÀÄ ªÀiÁ£ÀPÀ «ZÀ®£É PÀAqÀÄ» r¬Äj.

Find the standard deviation for the following data.

X	10	15	20	25	30	35
f	3	8	5	9	4	1

51) JgÀqÀÄ ©ÃeÉÆÃQÛUÀ¼À ªÀÄ.¸Á.C ªÀÄvÀÄ ®.¸Á.C UÀ¼ÀÄ PÀæªÀÄªÁV $(x-3)$ ªÀÄvÀÄ $(x^3-5x^2-2x+24)$ ºÁUÀÆ MAzÀÄ ©ÃeÉÆÃQÛ $(x^2-7x+12)$ DzÀgÉ E£ÉÆßAzÀÄ ©ÃeÉÆÃQÛ PÀAqÀÄ» r¬Äj.

The HCF and LCM of two algebraic expressions are$(x-3)$ & $(x^3-5x^2-2x+24)$. If one expression is $(x^2-7x+12)$ find the other.

52) $xy(x+y)=1$ DzÁUÀ $\frac{1}{x^3y^3}-x^3-y^3=3$ JAzÀÄ ¸Á¢¹

Then show that

53) vÁ¦dåzÀ° MAzÀÄ PÀtðªÀÅ E£ÉÆßAzÀÄ PÀtðªÀÅ 2 : 1 C£ÀÄ¥ÁvÀzÀ° «¨ÁV¸ÀÄvÀzÉ. ¸ÀªÀiÁAvÀgÀ ¨ÁºÀÄUÀ¼À° MAzÀÄ E£ÉÆßAzÀgÀ JgÀqÀgÀ¶ÖzÉ JAzÀÄ vÉÆÃj¹.

In a trapezium one of its diagonal divides the other in the ratio 2 : 1. Show that of its parallal side is twice the other.

54) A, B ,C & D PÉÃAzÀUÀ¼ÀÄ¼À 3 ¸ÉA. «ÄÃ wdå«gÀÄªÀ 4 ªÀÈvÀUÀ¼ÀÄ avÀzÀ°gÀÄªÀAvÉ ¸À²ð¸ÀÄvÀªÉ. ABCD ªÀUÀðzÀ ವಿಸ್ತೀರ್ಣ ಎಷ್ಟು?

Four circles with centre A, B, C & D are of radii 3cm touch externally as shown in the figure. Find the area of ABCD square.

55) ¸ÀªÀiÁAvÀgÀ ±ÉÃrAiÀÄ 5 £ÉÃ ¥ÀzÀ ªÀÄvÀÄ 10£ÉÃ ¥ÀzÀUÀ¼ÀÄ 1 : 2 ¥ÀªÀiÁtzÀ°ªÉ.T_{12} = 36 DzÀgÉ D ±ÉÃr §gÉ. 4x4

The fifth and 10th terms of AP are in the ratio 1 : 2. If T_{12} = 36 then write the sequence.

56) $y=½\ x^2$ £ÀPÉ gÀa¹, $\sqrt{10}$ gÀ ¨É¯ÉAiÀÄ£ÀÄß PÀAqÀÄ »r¬Äj.

Draw the graph of $y=½\ x^2$ and find the value of $\sqrt{10}$

57) PÉÃAzÀUÀ¼À CAvÀgÀªÀÅ 9 .¸ÉA.«ÄÃ EgÀÄAvÉ 3.5 ¸ÉA.«ÄÃ wdåªÀļÀ JgÀqÀÄ ¸ÀªÀð¸ÀªÀÄ ªÀÈvÀUÀ½UÉ ªÀåvÀå¸À ¸ÁªÀiÁ£Àå ¸À±ÀðPÀUÀ¼À£ÀÄß gÀa¹.

Draw two congruent circles of radii 3.5cm with their centres 9cm apart. Construct TCT.

58) MAzÀÄ ®A§PÉÆÃ£À w¨ÀÄdzÀ° «PÀtðzÀ ªÀUÀðªÀÅ G½zÉgÀqÀÄ ¨ÁºÀÄUÀ¼À ªÀUÀðUÀ¼À ªÉÆvÀÛPÉ ¸ÀªÀÄªÁVgÀÄvÀzÉ JAzÀÄ ¸Á¢¹

In a right angled triangle ,prove that suqare on the hypotenuse is equal to sum of the squres on other two sides.

UÀtÂvÀ ªÀiÁzÀj III Mathematics Question paper Model III

1) For any sets A, B and C, (AUB)UC = AU(BUC) represents —— property.
A, B ªÀvÀÄ C UÀ¼ÀÄ t UÀ¼ÁzÁU, (AUB)UC = AU(BUC)-------¤AiÀÄªÀÄªÀ£ÀÄß ¥ÀæwÃ¢¸ÀÄvÀz.
A) Associative B) Commutative C) Distributive D) Closure
A) ¸ºªvÀð¤ÃAiÀÄ B) ¥jªvÀð¤ÃAiÀÄ C) «¨ÁdP D) DªÀvÀ

2) First term of a GP is 4 and common ratio is 2 then 5th term is
MAzÀÄ UÀÄuÆÃvÀg ±ÉæÃtAiÀÄ ªÆz®£Ã ¥z 4 ªÀvÀÄ ¸ÁªiÁ£À C£ÀÄ¥Áv 2 Dzg 5£Ã ¥z
A) 8 B) 16 C) 32 D) 64

3) A & A^I are the matrix and its transpose. Then A +A^I is always
A & A^I UÀ¼ÀÄ ªiÁvÀÈP ªÀvÀÄ Czg¸À¼ÁAvjºz ªiÁvÀÈPU¼ÀÄ Dzg A +A^IAiiÁªÁU®Æ MAzÀÄ ___ ªiÁvÀÈP
A) Skew symmetric matrix/ವಿಷಮ ಸಮಮಿತಿ B) Symmetric matrix/¸ªÀÄ«ÄwÃ
C) Null matrix /±ÆÆ£À D) Identity matrix/C£À£À

4) If two expressions are prime to each other, then HCF of them is
JgqÀÄ ©ÃeÆÃQU¼ÀÄ ¥g¸g C«¨ÁdÀU¼Ázg, CªÀU¼ ªÀÄ¸ÁC -----
A) 0 B) – 1 C) 1 D) ±1

5) The value of $\sum a(b-c)$ is/ $\sum a(b-c)$g ¸AQ¥ gÆ¥
A) 1 B) – 1 C) 0 D) – 2

6) a + b +c = 2s then 2s – 2b is equal to ——-/a + b +c = 2s Dzg 2s – 2b g ¨¯
A) a + b – c B) a + c – b_____ C) b + c – a D) a – b – c

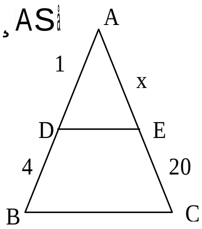
7) Rationalizing factor of $m\sqrt{p+q}$ is /g CPgtPÁgPªÀ
A) $\sqrt{p-q}$ B) $m\sqrt{p-q}$
C) $\sqrt{p+q}$ D) $m\sqrt{p+q}$

8) Which of the following is a pure quadratic equation ?
EªÀU¼° ±ÀzÀ ªUð¸«ÄÃPgt AiiÁªÀzÀ?
A) x + 2 = 5 B) $2x^2 = 72$ C) x (x – 1) = 0 D) $x^3 - 27 = 0$

9) The value of ‘k’ in the equation $x^2 - 2x + (k + 3) = 0$ has one root equal to zero
$x^2 - 2x + (k + 3) = 0$ ¸«ÄÃPgtz° MAzÀÄ ªÀÄÆ®ªÀ 0 DVzg ‘k’ £ ¨¯
A) 0 B) 1 C) – 3 D) 3

10) Number of tangents that can be drawn to a circle from an external point is
MAzÀÄ ¨ÁºÀ ©AzÀÄ«¤Az ªÀÈvPÀ J¼AiÀÄ§ºÀÄzÁz ¸±ðPU¼ ¸ASÀ
A) 3 B) 3 C) 4 D) 5

11) In the adjoining figure, AD : AB = 1 : 5
and CE = 20cms, then the value of ‘x’ is
avæ° AD : AB = 1 : 5 & CE = 20cms,Dzg‘x’£ ¨¯
A) 1 B) 4 C) 5 D) 25

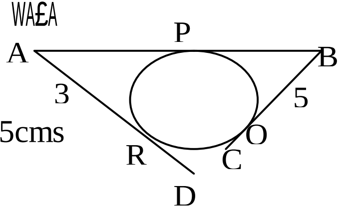


12) Formula to find the volume of a hemisphere is ———
MAzÀÄ Czð UÆÃ®z WE£ ¥® PAqÀÄ »rAiÀÄªÀ ¸Ævæ___
A) $\frac{3}{4}\Pi r^2h$ B) $\frac{4}{3}\Pi r^2h$ C) $\frac{4}{3}\Pi r^3$ D) $\frac{3}{4}\Pi r^3$

13) A regualr polyhedran with regual pentagonal faces is called
¤AiÄ«Ävï ¥AZ¨ÄeÁPÈwAiÄ£Äß ªÄÄRU¼ÁV ºÆA¢gÄª §ºÄªÄÄR WÀ£

A) Tetrahedran B) Hexahedran C) Dodecahedran D) Icosa hedran
A) ZÀvÀÄªÀÄÄðR WÀ£À B) ಷಣ್ಮುಖ ಘನ C) zÁzÀ±ÀªÀÄÄR WÀ£ÀD) «A±Àw WÀ£À

14) In the figure, AB, BC and AD are the tangents to the circle.
AR = 3cms, BQ = 5cms then AB is
avæ° AB, BC ªÄvÄ AD U¼Ä ªÈvPÌ J¼z ¸±ðPU¼Ä. AR = 3cms, BQ = 5cms
DzÁU AB £ C¼v______



A) 5cms B) 15cms C) 8cms D) 2cms

15) Total surface area of two identical solid hemispheres is $600cm^2$.
The area of the sphere formed by them is
JgqÄ ¸ªð¸ªÄ CzðUÆÃ¼U¼ MIÄ ¥Ætð ªÄÃ¯ïöÊ «¹Ãtð $600cm^2$ Dzg ¥ÆtðUÆÃ¼z ªÄÃ¯ïöÊ «¹Ãtðªà

A) $600cm^2$ B) $400cm^2$ C) $300cm^2$ D) $200cm^2$

16) If $K = \frac{1}{2} mv^2$ then the value of 'v' is
$K = \frac{1}{2} mv^2$ DzÁU 'v' £ ¨É¯É_____

A) $\pm\sqrt{\frac{2K}{m}}$ B) $\pm\sqrt{\frac{2m}{K}}$ C) $\pm\sqrt{\frac{2K}{m}}$ D) $\pm\sqrt{\frac{2m}{K}}$

17) Sum and product of the equation $3x^2 - 6 = 0$ are
$3x^2 - 6 = 0$ g ªÄÆ®U¼ ªÆv ªÄvÄ UÄt®§ªà

A) 2 , 0 B) 0 , – 2 C) – 2 , 0 D) 2 , – 2

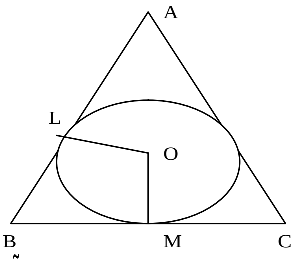
18) There are 10 blue buses to go from Udupi to Bangalore and 5 red buses to come from Bangalore to Udupi. How many ways one can go and come back to Udupi?
GqÄ¦¬ÄAz ¨AU¼Æj U ºÆÃU®Ä 10 ¤Ã° §¸ÄU½ª. ¨AU¼Æj¤Az GqÄ¦U §g®Ä 5 PA¥Ä §¸ÄU½ª.
ಒಬ್ಬನು ಬೆಂಗಳೂರಿಗೆ ಹೋಗಿ ಪುನಃ ಉಡುಪಿಗೆ ಎಷ್ಟು ರೀತಿಯಲ್ಲಿ ಬರಬಹುದು ?

A) $^{10}C_1 X\ ^5C_1$ B) $^{10}P_1 X\ ^5P_1$ C) $^{15}P_1 X\ ^5P_1$ D) $^{10}P_1 X\ ^{15}P_1$

19) LCM of $(x^3 - 8)$ and $(x^2 + 2x + 4)$ is
$(x^3 - 8)$ ªÄvÄ $(x^2 + 2x + 4)$ U¼ ®.¸Á.C.ªÀ

A) $x^3 - 2^3$ B) $x^2 - 2^2$ C) $x^3 + 2^3$ D) $x^2 - 2^2$

20) In the figure AB, BC and AC are the tangents to the circle with centre O. OL and OM are the Perpendiculars to the tangents. ∠B = 70° then ∠LOM is
avæ° O ªÉvPÃAzæAB, BC ªÄvÄ AC U¼Ä ¸±ðPU¼Ä.
∠B = 70° Dzg ∠LOM = ________



A) 140° B) 110° C) 90° D) 100°

II. Answer the following. 1x10=10

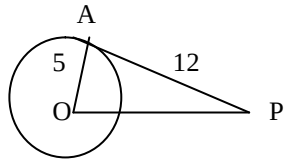
21) n^{th} term of a GP is T_n, common ratio is 'r' then T_{n+1} is ——-
UÄuÆÃvg ±ãæAiÄ n£Ã ¥z T_n ªÄvÄ ¸ÁªiÁ£À C£Ä¥Áv 'r' Dzg T_{n+1} £Ã ¥z

22) A, G & H are the AM, GM & HM for any two positive numbers. Then the relation between them can be written in the form of formula is ———
A, G ªÄvÄ H U¼Ä ¸ªiÁAvg ªiÁzÀ, UÄuÆÃvg ªiÁzÀ ªÄvÄ ºgÁvìP ªiÁzÀªÁzg Cª ÀU¼ ¸A§Azz ¸Ævæ§g.

23) A = $\begin{pmatrix} 0 & 2x \\ 6+x & 0 \end{pmatrix}$ is a skew symmetric matrix, then the value of 'x' is _____
ಒಂದು ವಿಷಮ ಸಮಮಿತಿ ಮಾತೃಕೆಯಾದರೆ 'x' £ ¨ _____

24) IF A is an assumed mean. The value of actual mean can be found out by the formula
A J£Ä ªÀ¼ÀzÀ CAzÁdÄ ¸gÁ¸jAiiÁzg ¤dªÁz ¸gÁ¸jAiÄ£Ä PAqÄ» rAiÄÄª ¸Ævæ

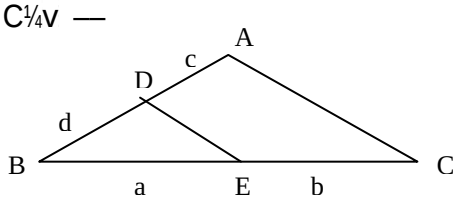
25) HCF of : $x^3 - 64$ and $x^2 - 16$ is ———/
$(x^3 - 64)$ ªÄvÄ $(x^2 - 16)$ E¼À¼À¼ ª Ä.¸Á.C. ªÃ£Ä?



26) Using notation – $x + y^2 - z + x^2 - x + z^2$ can be written as ——-
$-x + y^2 - z + x^2 - x + z^2$ £Ä ¸APÃv G¥AiÆÃV¹ §gzÁU —

27) In the figure AP tangent = 12cms, OA radius = 5cms, then the length of OP is —-
avæ° AP ¸±ðP =12cms ªÄvÄ wæ OA= 5cms Dzg OP £ C¼v —

28) In the figure, AC II DE, then corollary of BPT
in terms of a,b,c &d is ——-
ªÄÆ®¸ªiÁ£Ä¥ÁvvAiÄ G¥¥æÄÃAiÄz ¥ÁÁg
a,b,c ªÄvÄ d U¼ £qÄ«£ ¸A§Az §g¬Äj.



29) Total surface area of a cylinder is ——-
MAzÄ ¹°Aqj£ ¥Æt ð ªÄÃ¯ï «¹Ãt ð PAqÄ» rAiÄÄª ¸Ævæ—-

30) State converse of Pythagorean theorem/ ¥ÀxÁUÆÃg¸£ ¥æÄÃAiÄz «¯ÆÃªÄ ¥æÄÃAiÄ §g.

III. Answer the following / F P¼V£ª À¼À¼À¼£Ä Gvj¹.

31) A = { r, a , t } , B = { c, a , t} find A∩B through Venn diagram.
A = { r, a , t } , B = { c, a , t} DzÁU A∩B £Ä ªÄ£ï avæ ªÄÆ®P vÆÃj¹.

32) A florist has 110 champak flowers garlands. 50 off jasmine garlands and 30 of each. Find the total number of garlands with him.
M§ ºÆªÁrU£ §½ 110 ¸A¦U ºÆª£Ä ºÆA¢gÄª ºÁgU½ª. 50 ªÄºU ºÆª£Ä ºÆA¢gÄª ºÁgU¼Ä ªÄvÄ 30Jgq§UAiÄ ºÆU¼£Ä ºÆA¢gÄª ºÁgU¼Æ Eª. ºÁUÁzg Cª£ºgÄª MlÄ ºÁgU¼ ¸AS¦ ಎಷ್ಟು ?

33) $S_8 : S_4 = 97 : 81$ Find the common ratio. / $S_8 : S_4 = 97 : 81$ Dzg ¸ÁªiÁ£¦ C£Ä¥ÁvªÄ PAqÄ» r¬Äj.

34) In a HP, 4th term is $\frac{1}{3}$ and 12th term is $\frac{1}{27}$ Write the HP.
MAzÄ ºgÁvÁP ±æAiÄ £Á®£Ä ¥z $\frac{1}{3}$ ªÄvÄ 12 £Ä ¥z $\frac{1}{27}$ Dzg ºgÁvÁP ±æAiÄ£Ä §g¬Äj.

35) Solve for 'x' : $\begin{pmatrix} x^2 & 3 \\ 4 & 5 \end{pmatrix} - 2 \begin{pmatrix} x & 1 \\ -1 & 0 \end{pmatrix} = \begin{pmatrix} 0 & 1 \\ 6 & 5 \end{pmatrix}$ 'x' £ ¨ PAqÄ» r¬Äj.

36) Write the meaning of ^nP_r and write the formula./ ^nP_r Ezg ¸Ævæ§g.

37) Find the product of √3 and $\sqrt[3]{2}$ / √3 ªÄvÄ $\sqrt[3]{2}$ UÄt®§¦ PAqÄ» r¬Äj.

38) Solve the equation using formula: $x^2 - 7x + 12 = 0$
$x^2 - 7x + 12 = 0$ £Ä ¸ÆvæG¥AiÆÃV¹ ©r¹.

39) Rationalize the denominator and simplify: $\frac{2}{\sqrt{6} + 2}\sqrt{5}$
bÃz CPgtÃPj¹ ¸APÃ¦¹ :

40) The base of a triangle is 4 cms more than its height. Area of the triangle is $48cm^2$ Find its base and height.
MAzÀ wæÃdz ¥Ázª À JvgQÀv 4 ¸A «ÄÃ ºZÁVz. Czg «¹Ãtðª À 48 Z ¸A «ÄÃ Czg ¥Ázz Gz ªÀvÀ Jvgª£ÀÄ PAqÀ» r¬Äj.

41) If one root of the equation $x^2 + px + q = 0$ is 3 times the other then prove that $3p^2 = 16q$
$x^2 + px + q = 0$ ¸«ÄÃPgtz MAzÀ ªÀÆ®ª À E£ÆÀAzÀ ªÀÆ®z 3 g¶zg $3p^2 = 16q$ JAzÀ ¸Á¢¹.

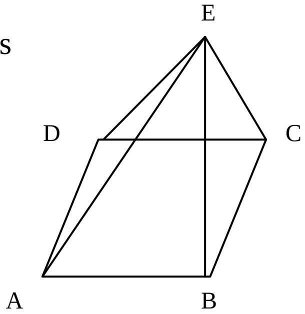
42) Solve /©r¹ : $(x + 4)(x - 4) = 6x$

43) Find the sum of/ EªÀU¼£ÀÄ ¸APÃ¦¹ : a) $(4 \oplus_7 6) \oplus_7 5$ b) $(5 \otimes_6 4) \oplus_6 3$

44) Draw the plan of a field with following data/ F zvÁA±U½Az £P ga¹ :

	To D in meters	
	300	
	275	To C 75
To E 50	200	
	150	To B 50
	100	
	From A	

45) Construct two tangents at the ends of a diameter of a circle of radius 3cms
MAzÀ ªÀvz wæ 3 ¸A «ÄÃ Czg ªÁ¸z vÀ¢ ©AzÀU¼° ¸±ðPU¼£ÀÄ ga¹.



46) Verify F + V = E + 2 formula for the given polyhedron.
F W£ÁPwU F + V = E + 2 ¸Ævæ£ÀÄ C£¬Ä¹ vÁ¼ £ÆÃr.

47) Construct the graph for the given matrix./ F ªiÁvPAiÀ eÁ¯ÁPw ga¹.

$$\begin{pmatrix} 0 & 3 & 0 \\ 3 & 0 & 2 \\ 0 & 2 & 3 \end{pmatrix}$$

48) The curved surface area of a cone is $440cm^2$ and slant height is 10cms. Find radius of the cone.
MAzÀ ±APÀ«£ ªPæÃÃ¯ö PÃvæ®ª À 440 Z ¸A «ÄÃ ªÀvÀ Ng Jvgª À 10 ¸A AF Dzg Czg wæª£ÀÄ PAqÀ» r¬Äj.

IV Answer the following / P¼V£ ¥æU½U Gvj¹. 3x6 = 18

49) A school has 8 teachers. HM is one among them. A) How many committees of 5 can be formed? How many of these have HM as a member?
ಒಂದು ಶಾಲೆಯಲ್ಲಿ 8 ಜನ ಶಿಕ್ಷಕರಿದ್ದಾರೆ. ಅವರಲ್ಲಿ ಮುಖ್ಯಶಿಕ್ಷಕರು ಒಬ್ಬರು. ಅ) ಇವರಿಂದ 5 ಜನರ ಎಷ್ಟು ಸಮಿತಿಗಳನ್ನು ಮಾಡಬಹುದು? ಆ) ಇಂತಹ ಎಷ್ಟು ಸಮಿತಿಗಳಲ್ಲಿ ಮುಖ್ಯಶಿಕ್ಷಕರು ಇರುತ್ತಾರೆ ?

50) In a cricket play Arun and Bharath scored average run 70 and 60 and mean deviation 4.2 and 3.0 respectively. Who is more consistent?
CgÀuï ªÀvÀ ¨gvï Eªg Qæmï Dlz ¸gÁ¸j g£ÀU¼À Pæªà ÁV 70 ªÀvÀ 60 ºÁUÆ ªiÁ£P «Z®£ 4.2 ªÀvÀ 3.0 Dzg AiiÁg ¤ªðºu ¹gªÁVz ?

51) Find the HCF of : $x^3 - 2x^2 - 13x - 10$ and $x^3 - x^2 - 10x - 8$
$x^3 - 2x^2 - 13x - 10$ ªÀvÀ $x^3 - x^2 - 10x - 8$ EªÀU¼ ªÀ.¸Á.C. ª£ÀÄ PAqÀ» r¬Äj.

52) If $a + b + c = 0$ prove that $b^2 - 4ac$ is a perfect square.
$a + b + c = 0$ Dzg $b^2 - 4ac$ MAzÀ ¥Ætðªð JAzÀ vÆÃj¹.

53) In an equilateral ΔABC; $AN \perp BC$ prove that $AN^2 = 3BN^2$

ΔABC MAzÄ ¸ªÀ¨ÁºÀ wæÄd. $AN \perp BC$ Dzg $AN^2 = 3BN^2$ JAzÄ ¸Á¢¹.

54) Three circles with centers A, B and C touch externally. AB = 7cms, BC = 5cms and AC= 6cms Find the radius of the circles

A, B ªÀvÀ C PÃAzÀæ¼À¼À ¨ÁºÀåªÁV ¸²ð¸Àª ªÀÆgÀ ªÀÈvÀUÀ¼ÁVª. CªÀÄU¼ PÃAzÀæ¼ £qÀ«£ zÆg AB = 7cms, BC = 5cms ªÀvÀ AC= 6cms Dzg D ªÀÈvÀU¼ wæÀÄU¼£ÀÄß PAqÀ» r¬Àj.

V Answer the following: 4x4=16

55) Sum of the six terms of an AP is 345 and difference between 1st and last term is 55. Find the terms of the AP

MAzÀ ¸ªiÁAvg ±ÃæAiÀ 6 ¥zU¼ ªÆv 345. ªÆz® ªÀvÀ PÆ£AiÀ ¥zU¼ ªÀvÁå¸ 55 Dzg ¸ªiÁAvg ±ÃæAiÀ£ÀÄß §g¬Àj.

56) Draw the graph of $y = x^2$ and $y = x + 6$ Hence solve the equation $x^2 - x - 6 = 0$

$y = x^2$ ªÀvÀ $y = x + 6$ U¼ £P ga¹ Czg ¸ºÁAiÀ¢Az $x^2 - x - 6 = 0$ £ÀÄß ©r¹.

57) Construct two TCT to two circles of radii 3.5cms and 2.5cms separated by 4cms measure the length of the tangent and verify with calculated length.

3.5 ¸A«ÄÃ ªÀvÀ 2.5 ¸A«ÄÃwæÀåªÀ¼ JgqÀ ªÀÈvÀU¼À 4 ¸A«ÄÃ CAvgzº ª. CªÀÄU½U ªÀvÀ¸ ¸ÁªiÁ£À ¸±ðPU¼£ÀÄß J¼¬Àj.

58) Two triangles are equiangular, and then their corresponding sides are proportional. Prove

JgqÀ wæÄdU¼À ¸ªÀPÆÃ¤ÃAiÀU¼Ázg CªÀÄU¼ C£ÀgÆ¥ ¨ÁºÀU¼À ¸ªiÁ£À¥Ávzº gÀvª JAzÄ ¸Á¢¹.

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PART I
PHYSICS & CHEMISTRY
EXAMPLE FOR DIFFERENT TYPES OF QUESTIONS

Instruction: The Question cum answer booklet contains 39 questions including sub question of match the following and main questions.

1. Due to heavy traffic near the school the department of traffic police wants to install automatic traffic lights. This can be done by using the Principle of
   a) Raman effect
   b) Radiography
   c) Holography
   d) Photoelectric effect

2. Water is to be sterilized for drinking purpose without using any chemicals this can be done by using
   a) u v rays
   b) visible light
   c) short wave length radio waves
   d) long wave length Radio waves

3. In a heat engine the linear motion of the Piston is converted into rotation by the component.
   a) Spart plug
   b) Carburetor
   c) Crank Shaft
   d) Fuel injection pump

4. An Engineer wants to design an engine to convert 800 KJ of heat into 840KJ of useful mechanical work. The correct statement related to the above engine is that it
   a) is less efficient
   b) is more efficient
   c) cannot be designed
   d) is 100% efficient

5. An astrophysics observes that Galaxy "A" is more red shifted than galaxy "B". The conclusion that can be frown from this is that
   a) The velocity of 'A' is more than 'B'
   b) The velocity of 'B' is more than 'A'
   c) both the galaxies have equal velocity.
   d) both the galaxies are at rest.

6. In a nuclear reactor, the number of cadmium rods used are less than the required number. Then one of the possibilities is
   a) the reactor may explode
   b) the chain reaction stops
   c) number of fissions decrease
   d) the number of neutrons decreases

7. If emission test is required for an LPG run auto rickshaw, the availability of oxygen is moles for combustion of one mole of butane is
   a) less than 5
   b) between 8.5 and 9.5
   c) between 9.5 and 10.5
   d) more than 10.5

8. In a soap industry the chemist forgets to add sodium chloride during the manufacture of soap, The possible effect is
   a) Soap cannot be easily separated.
   b) Chemical composition of soap changes
   c) Soap will not get required colour
   d) the solubility of soap increases

9. Borosilicate glass is used to make school laboratory equipments because it
   a) is highly transparent
   b) with stands sudden changes in the temperature and transparent
   c) has high refractive index
   d) absorbs radiations

10. Using sodium hydroxide as one of the raw materials it is possible to prepare
   a) soaps and detergents
   b) cement and ceramics
   c) glass and plastics
   d) cement and glass

Fill in the blanks with suitable terms 1X3=3

11. A p-n junction allows current to pass in one direction. This is called _____

12. Radar gun works on the principle of _____

13. The device which converts light energy into electrical energy is _____

14. Match the following and write the answers below the Questions in the space provided:

A	B	Answers
1. Natural gas	L.P.G	1.
2. Butane	explosives	2.
3. Benzene	to detect leakage of LPG	3.
4. Toluene	emission test	4.
	Carbon black	
	Perfumes	
	Exhaust gas	

15. A cyclist going round a curve leanes towards the centre of the curve. Give reason .

16. What is a centrifugal Governer?

17. What is the colour of the star Betelgeuse?

18. Mention the purpose of using a plane glass sheet in a solar cooker?

19. How does the pressure cooker help in saving energy?

20. Write the balanced chemical equation of the reaction between sodium carbonate and calcium chloride.

21. Write any two factors on which the induced EMF depends. 2X9=18

22. Draw a neat sketch of a D.C. Dynamo

23. What is electromagnetic spectrum ?
    a) Name the electromagnetic radiations which has
    1. the lowest frequency and
    2. lowest wavelength

24. Draw a neat sketch to show the exhaust stroke of an external combustion engine.

25. Give scientific reasons for the following
    a) Iron articles are electroplated with chromium
    b) Calcium silicate is a protective layer for the molten iron in the blast furnace
    c) Copper is not used to prepare Hydrogen in the laboratory
    d) Ore of copper is not concentrated by hydraulic washing.

26. What is the role of magnesium and dilute hydrochloric Acid in the preparation of silicon.

27. Write the steps involved in recycling of plastics.

28. Name the two types of Hardness in water. On what principle can the hardness of water be removed?

29. Draw a circuit symbol of each of the following

a) forward biased diode

b) transistor of npn

30. State the universal law of gravitation. Prepare it by a mathematical equation.

31. What is impure spectrum? Why is Raman scattering called incoherent and ray height scattering called coherent scattering?

On what basis did Raman give satisfactory explanation of incoherent scattering?

32. A radio active element has a half life period of 8 days. If measured how the mass of that element is 3.125g. What was its initial mass 40 days before.

33. Draw a neat diagram of the device that converts nuclear energy into electrical energy.

34. State the law of conservation of momentum

"The escape velocity on the earth is 11.2km/s" What does it mean? How are orbital and escape velocities related to one another?

At what height Geostationary satellite is launched.

35. How does a protesters attain the stable state?

What is a neutron star?

36. Draw a neat diagram of each of the following

1. Blast furnace used to extract iron.
2. Electrolytic refining of copper.

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BIOLOGY

DIFFERENT TYPES OF QUESTION

Instruction : The question-cum-booklet contains 22 questions including sub questions of match the following and main questions.

I. FOUR ALTERNATES ARE GIVEN TO EACH STATEMENT CHOOSE THE CORRECT ANSWER AND WRITE IN THE SPACE PROVIDED 1X5=5

1. One of the following statements is true.
   a) Ragi plant has parallel venation and cotyledon raises above the soil during germination.
   b) Ragi plant has parallel venation and cotyledon remains below the soil during germination.
   c) Ragi plant has reticulate venation and cotyledon remains below the soil during germination.
   d) Ragi plant has reticulate venation and cotyledon raise above the soil during germination.
2. A person is advised not to donate blood after being tested for ELISA, because he is infected by
   a) HIV b) HBV c) HSV d) SIV
3. After being pricked by a thorn, a boy withdraws his leg immediately. The center of this action is
   a) Cerebrum b) Cerebellum c) Spinal Cord d) Hypothallamus
4. Vegetative reproduction found in multicellular algae is a natural process of
   a) Cloning b) DNA finger printing
   c) Genetic engineering d) Recombining DNA
5. Blood report of a 40 year old person indicates high glucose level. He may be at risk of getting.
   a) Glaucoma b) Cataract c) Astigmatism d) Retinopathy

II. MATCH PART 'A' WITH PART 'B' AND WRITE THE CORRECT ANSWERS IN THE SPACE PROVIDED 1X4=4

A	B	ANSWERS
1. Areolar tissue	a) provides frame work to Spleen	1.
2. Ligament	b) attaches muscles to bones	2.
3. Adipose tissue	c) digesta toxic substances	3.
4. Tendores	d) provides frame work to entire body	4.
	e) attaches one bone to another	
	f) avoids friction in joints	
	g) acts as a shock absorber	

III. ANSWER THE FOLLOWING QUESTIONS IN A WORD OR A SENTENCE

7. What is biotechnology?

8. Which important characteristic feacture of selaginella depicts that it is highly evolved than Riccia?

9. Ramya experiences numbness in her limbs due to accumulation of wotery fluids, name the disease and adulterant that has caused it.

10. Why is goiter called an endemic disease?

IV. ANSWER THE FOLLOWING IN 2-3 SENTENCES EACH 2X6=12

11. How are ear and throat connected? What is its advantage?

12. Raju resides in an area where not much of lichens are found. List any four health hazards he may be suffering fro,.

13. Explain the structure of HIV in 2 or 3 sentences.

14. Mention one function of the following
a) Sclereids b) Companion cells

15. How can vanaspathi is ghee be detected?

16. A student has uprooted a weed plant in the school garden. The student infers that it is a dicot plant. Support the inference.

IV. ANSWER THE FOLLOWING 3X2=6

17. How does electrochemical fixation take place during nitrogen cycle?

18. Draw a diagram to show external features of fish and label any two parts?

V.

4X1=4

19. Draw a diagram of vertical section of human brain and label any four parts.

~*~*~

«eÁ£À ªÀÄzÀÄ I Model question paper - I

PART - I

PHYSICS & CHEMISTRY

¨ÉÊvÀÄ¸ÀÄªÀÄÄvÀÄgÁ¸ÁAiÀÄÄ£À¸À

For Each multiple choice question four alternatives are given. Out of these alternatives choose the correct answer and write the answer in the space provided

1. Due to heavy traffic near the school the department of traffic police wants to install automatic traffic lights. This can be done by using the Principle of 1 x 10 = 10
   a) Raman effect b) Radiography c)Holography d) Photoelectric effect
   ±Á¯AiÄ §½ ¸AZÁg zlu eÁ¹ EgÄªÀzjAz ¸AZÁj ¥ÆÃ°¸gÄ ¸AiÄAZÁ°v ¢Ã¥U¼£Ä ºÁP®Ä EaÀ¹zÁg. Ez£Ä ªiÁq®Ä G¥AiÆÃV¸Ä ª vv
   C) gÁªi£ï ¥juÁªÄ D) bÁAiiÁ ©A§£ E) ºÁ¯ÆÃUæe F) zÄw «zÄvï ¥juÁªÄ

2. Water is to be sterilized for drinking purpose without using any chemicals this can be done by using
   a) u v rays b) visible light c) short wave length radio waves d) long wave length Radio waves
   gÁ¸ÁAiÄ¤P ª¸ÄU¼£Ä G¥AiÆÃV¸zÃ ¤Ãg£Ä ªAzÀPÁgP QæÄU M¼¥r¹ PÄrAiÄÄª ¤Ãg£Ä ¥qAiÄ¨ÃPÁVz EzPÁV §¼¸ÄªÀzÄ
   C) £Ãg¼ÁwÃv Qgt U¼Ä D) UÆÃZg ¨¼PÄ E) Prª Ä vgAUzÆgª¼ gÃrAiÆÃ vgAUU¼Ä
   F) ºZÄ vgAUzÆgª¼ gÃrAiÆÃ vgAUU¼Ä

3. In a heat engine the linear motion of the Piston is converted into rotation by the component
   a) spark plug b) Carburettor c) Crank shaft d) Fuel injection pump
   ಉಷ್ಣ ಇಂಜಿನ್‌ನಲ್ಲಿ ಕೊಂತದ (ಪಿಸ್ಟನ್) ರೇಖೀಯ ಚಲನೆಯನ್ನು ಭ್ರಮಣೆಯಾಗಿ ಪರಿವರ್ತಿಸುವುದು
   C) ¸ÁPïð ¥Uï D) PÁ§ðgÃlgï E) ªPæÄq F) EAz£ EAdP£ï ¥A¥ï

4. An engineer wants to design an engine to convert 800KJ of heat into 840KJ of useful mechanical work. The correct statement related to the above engine is that it
   a) is less efficient b) is more efficient c) cannot be designed d) is 100% efficient
   M§ EAf¤AiÄgï £Ä 800 KJ ±ÁRª£Ä 840 KJ G¥AiÄÄP AiiÁAwæP®¸ªÁV ¥jªwð¸ÄªAvº EAf£Ä «£Á¸UÆ½¸®Ä EaÀ¸ÄvÁ£. F EAf¤U ¸A§A¢¹zAvº ¸jAiiÁz ºÃ½P
   C) EzÄ Prª Ä zPv ºÆA¢z D) EzÄ ºZÄ zPv ºÆA¢z E) Ez£Ä «£Á¸UÆ½¸®Ä ¸Ázï«®
   ಈ) ಇದು ಶೇ.100 ರಷ್ಟು ದಕ್ಷತೆ ಹೊಂದಿದೆ

5. An astrophysics Scientist observes that galaxy 'A' is more red shifted than galaxy 'B'. The conclusion that can be drawn from this is that
   a) the velocity of 'A' is more than 'B' b) the velocity of 'B' is more than 'A'
   c) both the galaxies have equal velocity d) both the galaxies are at rest.
   M§ RUÆÃ¼ ¨Ëv «eÁ¤AiÄÄ U®Q 'J' J£Ä ªÀzÄ U®Q '©' VAv ºZÄ PA¥Ä ¥®l ºÆA¢gÄªÀz£Ä UªÄ¤¸ÄvÁ£. EzjAz PÉUÆ¼§ºÄzÁz wÃªiÁð£ªÃ£Azg
   C) 'J' £ ªÃUªÀ '©' VAv ºZÄ D) '©' £ ªÃUªÀ 'J' VAv ºZÄ
   E) JgqÆ U®QU¼ ªÃUªÀ ¸ªÄ F) JgqÆ U®QU¼Ä ¤±® ¹wAiÄ°z.

6. In an nuclear reactor, the number of cadmium rods used are less than the required number. Then one of the possibilities is
   a) the reactor may explode
   b) the chain reaction stops
   c) number of fissions decrease
   d) the number of neutrons decrease

MAzÀ ¨ÉÆÃfP QæÃiÁPÁjAiÀÄ° §¼¹z PÀ¼ÀrAiÀÄA ¸g¼ÀU¼ ¸ASÉAiÀÄ CUvÀQAv PrªÀ Ez. EzjAz DUÀ§ºÀzÁz MAzÀ ¸ÁzÀv.

C) QæÃiÁPÁjAiÀÄ ¸ÀÆÃn¸§ºÀzÀ
D) ¸g¥½ QæÃiÀ ¤AvÀ ºÀÃUÀªÀzÀ
E) «z¼£U¼ ¸ASÉ PrªÀAiiÁUÀªÀzÀ
F) £ÀÄmÁæÃiÀU¼ ¸ASÉ PrªÀAiiÁUÀªÀzÀ.

7. If emission test is required for an L.P.G run auto rickshaw, the availability of oxygen in moles for combustion of one mole of butane is
   a) less than 5
   b) between 8.5 and 9.5
   c) between 9.5 and 10.5
   d) more than 10.5

zæev ¥mÁæÃæAiÀÄA¤Az PÁAiÀð ¤ªð»¸ÀªÀ CmÁÆÃjPÁU ºÁg¸Æ¸ÀªÀ ¥jÃP ¨ÃPÁzg 1 ªÁÆÃ¯ï §ÄmÃ£ zº£ QæÃiÀU zÁgPÀª DªÀd£P ªÁÆÃ¯ïU¼°

C) 5 VAv PrªÀ
D) 8.5 jAz 9.5
E) 9.5 jAz 10.5
F) 10.5 QAv ºZÀ

8. In a soap industry the chemist forgets to add sodium chloride during the manufacture of soap, the possible effect is
   a) soap cannot be easily separated
   b) chemical composition of soap changes
   c) soap will not get required colour
   d) the solubility of soap increases.

¸Á§Æ£À PÁSÁð£AiÀ° gÁ¸ÁAiÀ¤P vdgÀ ¸Á§Æ££À vAiiÁj¸ÀªÁU ¸ÀÆÃrAiÀÄA PÀÆÃgÉqï ¸Ãj¸ÀªÀz£À ªÀgvÀ ©qÀvÁ£. Ezg ¥juÁªÀ¢AzÁUÀª ¸Ázv

C) ¸Á§Æ££À ¸À®¨ªÁV ¥æÃQ¸®À DUÀª À¢®
C) ¸Á§Æ¤£ gÁ¸ÁAiÀ¤P ¸AAiÀÄd£ §z¯ÁUÀvz.
E) ¸Á§Æ¤U ¨ÃPÁz §t §gÀª À¢®
F) ¸Á§Æ£À «°Ã£ªÁUÀª ºZÁUÀvz.

9. Borosilicate glass is used to make school laboratory equipments because it
   a) is highly transparent
   b) with stands sudden changes in the temperature and transparent
   c) has high refractive index
   d) absorbs radiation

±Á¯AiÀ ¥æÃæÃUÁ®AiÀz° G¥Pgt U¼£À ªÁiÁq®À ¨ÆÃgÆÃ¹°PÃmï UÁd£À §¼¸ÀvÁg KPAzg EzÀ

C) ºZÀ ¥Ágz±ðP
D) vÁ¥z Kj½vU¼£À vqAiÀÄvz ªÀvÀ ¥Ágz±ðP
E) ºZÀ ªÀQæÃªÀ£ ¸ÆZÀAPªÀ£À ºÀA¢z
F) «Qgt U¼£À »ÃjPÀ¼Àvz.

10. Using sodium hydroxide as one of the raw materials it is possible to prepare
   a) soaps and detergents
   b) cement and ceramics
   c) glass and plastics
   d) cement and glass

¸ÀÆÃrAiÀÄA ºÉqÁæÃiqï£À RZÁª¸ÀU¼° MAzÁV §¼¹ vAiiÁj¸®À ¸ÁzÀªÁUÀªÀzÀ

C) ¸Á§Æ£ÀU¼À ªÀvÀ ªÁiÁdðPU¼À
D) ¹ªÀAmï ªÀvÀ ¹gÁ«ÀPï
E) UÁdÀ ªÀvÀ ¥Á¹Pï U¼À
F) ¹ªÀAmï ªÀvÀ UÁdÀ.

Fill in the blanks with suitable terms
¸ÀÆP ¥zU½Az ©ngÀª ¸À¼U¼£À ¨wð ªiÁr

11. A p-n junction allows current to pass in one direction this is called_____ 1 x 3 = 3
p-n dAP£ï «zÀÄvï £Ã MAzÀ £Ãgz° ªiÁvæ jAiÀ®Ä ©qÀvz. F QæAiÀ ° ¸gÀ ____ .

12. Rader gun works on the principle of_____
gÁqÁgï U£ï P®¸ ªiÁqÀª vv _____.

13. The device which converts light energy into electrical energy is_____
¨¼Q£ ±QAiÀ£Ã «zÀÄvï ±QAiiÁV ¥jªwð¸Àª ¸Áz£ _____

14. Match the following/ºÆA¢¹ §g¬Äj: 1 x 4 = 4

A	B
1. Natural Gas/£É¸VðP C¤®	L.P.G/zæv ¥æÉÃæ AiÀÄ C¤®
2. Butane/§ÆmÃ£ï	explosives/¸ÆÃlPU¼Ä
3. Benzene/¨£f£ï	to detect leakage of L.P.G/zæv ¥æÉÃæ AiÀÄ C¤® ¸ÆÃjP ¥v ºZÀªÁzÀ
4. Toluene/mÁ°Ã£ï	emission test/ºÆg¸Æ¸À«P ¥jÃP
	Carbon black/PÁ§ð£ï ªÀ¹
	Perfumes/¸ÀªÁ¹P
	Exhaust gas/ನಿಷ್ಕಾಸ ಅನಿಲ .

15. A cyclist going round a curve leans towards the centre of the curve. Give reason 1 x 6 = 6
¸ÉP¯ï ¸ÁÁg£Ä wgÀ«£° ºÆÃUÀªÁU wgÀ«£ PÃAzæ PqU ªÁ®ÄvÁ£. EzP PÁgt PÆr.

16. What is a centrifugal governer?
¸Anæ¥Éeï ¤AiÀÄAvæ JAzgÃ£Ä ?

17. What is the colour of the star Betelgeuse?
©Ãl¯ï VÃ¸ï £Pvæ §tªÃ£Ä ?

18. Mention the purpose of using a plane glass sheet in a solar cooker?
¸Ëg CrU M¯AiÀ° UÁf£ ªÀÄZ¼ª£Ã §¼¸Àª GzÀÃ±ª£Ã w½¹.

19. How does the pressure cooker help in saving energy?
¥ægï PÀPgï ±QAiÀ£Ã G½vÁAiÀ ªiÁq®Ä ºÃU ¸ºÁAiÀPÁjAiiÁVz ?

20. Write the balnced chemical equation of the reaction between sodium carbonate and calcium chloride
¸ÆÃrAiÀÄ PÁ¨ÆÃð£Ãmï ªÀvÀ PÁ°AiÀÄ PÆÃgÉqïU¼ £qÀ«£ gÁ¸ÁAiÀ¤P QæAiÀ ¸ªÀvÆV¹z gÁ¸ÁAiÀ¤P ¸«ÄÃPgtª£Ã §g¬Äj.

21. Write any two factors on which the induced EMF depends 2 x 9 = 18
¥æçv «zÀÄvï ZÁ®P §® Cª®A©¹gÀª AiiÁªÉzÁzgÆ JgqÀ CA±U¼£Ã w½¹.

22. Draw a neat sketch of D.C. Dynamo
r.¹. qÉ£ªÆÃz CAzªÁz avæ£Ã §g¬Äj.

23. What is electromagnetic spectrum?

a) Name the electromagnetic radiations which has
   1. the lowest frequency and
   2. lowest wavelength

«zÀÄvï PÁAwÃAiÀ gÀÄÃ»v JAzgÀÄ£Ä ?

C) CvÀÄAv Pr ªÀ Dªïw ªÀÄvÀ

D) CvÀÄAv Pr ªÀ vgAUzÀÄg EgÀªÀ«zÀÄvï PÁAwÃAiÀ «QgtU¼£À ºÀ¸ÀjÀ¹.

24. Draw a neat sketch to show the exhaust stroke of an external combustion engine
ಬಹಿರ್ದಹನ ಇಂಜಿನ್ನಿನ "ನಿಷ್ಕಾಸ ಹೊಡೆತ" ವನ್ನು ತೋರಿಸುವ ಅಂದವಾದ ಚಿತ್ರವನ್ನು ಬರೆಯಿರಿ.

25. Give scientific reasons for the following
EªÀ¼U½U ªÀÄeÁ¤P PÁgt PÀÄr.

a) Iron articles are electroplated with chromium

C) P©tz ªÀ¸ÀU¼£À PÀÄæ¤ÀÄAiÀÄA¤Az «zÀÄvï ¯Ã¥£ ªiÁqÀÄvÁg.

b) Calcium silicate is a protective layer for the molten iron in the blast furnace

D) HzÀ PÀ®ÀªÀÄAiÀ° zÀæv P©tPÀ PÁ¹°AiÀÄA ¹°PÀmï gPuÁ PªÀZªÁVgÀvz.

c) Copper is not used to prepare hydrogen in the laboratory

E) ¥ÀæÀÄU ±Á¯AiÀ° ºÀ¼qÀÄæd£ï C¤®ª£À vAiiÁj¸®Ä vÁªÀÄæ£À §¼¸ÀªÀ¢®.

d) Ore of copper is not concentrated by hydraulic washing

F) ºjAiÀÄª ¤Ãj¤Az vÀÄ¼AiÀÄªÀzg ªÀÄÆ®P vÁªÀÄæ C¢g£À ¸Ágª¢ð¸ÀªÀ¢®.

26. what is the role of magnesium and dilute hydrochloric acid in the preparation of silicon
¹°PÁ£ï vAiiÁjPAiÀ° ªÀVÃ¶AiÀÄA ªÀvÀ zÀ§ð® ºÀ¼qÀÄæÀÄjPï DªÀz ¥ÁvÀæÀ£Ä?

27. write the steps involved in recycling plastics.
¥Á¹Pï £ ¥À£gï §¼PAiÀ° M¼UÀÄrgÀª ºAvU¼£À §g¬Äj.

28. Name two types of hardness in water. On what principle can hardness of water be removed?
¤Ãj£ Uq¸Äv£z JgqÀ «zU¼£À ºÀ¸ÀjÀ¹? AiiÁª vvz ªÀÄÃ¯ ¤Ãj£ Uq¸Äv£ª£À ¤ªÁgu ªiÁq¯ÁUÀvz?

29. Draw a circuit symbol of each of the following
a) Forward biased diode b) transistors of n-p-n
F P¼PAq ¥ÀæAiÀÄzPÀ ªÀÄAq® ¸APÃvª£À §g¬Äj.
J. ªÀÄ£Àq - M®ÀªÀ - qAiÀÄÄqï ©. n-p-n mÁæ¸gï

30. State the universal law of gravitation . prepare it by a mathematical equation 3 x 4 = 12
«± ªÁ¸À UÀgÀv ¤AiÀªÀªÀª£À ¥ÀæÁ¢¹ Ez£À MAzÀ ¸«ÀÃPgtz gÀ¥z° ¤gÀ¸À¹.

31. What is impure spectrum? Why is Raman scattering called incoherent and Rayleigh scattering called coherent scattering. On what basis did Raman give satisfactory explanation of incoherent scattering?
C±ÀzÀ gÀÄÃ»v JAzgÀÄ£Ä? gÁªÀ£ï ZzjP JAzÀ ªÀvÀ gÁ¯ ZzjPAiÀ£À ¸A¸P ZzjP J£ÀvÁg KP? C¸A¸P ZzjPU gÁªÀ£ïgÀ AiiÁª DzÁgz ªÀ¯ ¸ªÀ¥ðPªÁz ªÁSÀAiÀ£À ¤ÃrzgÀ?

32. If the present mass of a radio active element is 3.125 gm and its half life period is 8 days. What was its initial mass before 40 days.

ಒಂದು ವಿಕಿರಣ ಪಟು ಧಾತುವಿನ ಅರ್ಧಾಯುಷ್ಯವು 8 ದಿನಗಳು. ಈಗ ಅಳತೆ ಮಾಡಿದಾದ ಆ ಧಾತು"ನ ದ್ರವ್ಯ ರಾಶಿ 3.125 ಗ್ರಾಂ Ez. 40 ¢£U¼ »Az EzÃ zÁvÄ«£ zÀÄgÁ² K¶¢vÄ?

33. Draw a neat diagram of the device that converts nuclear energy into electrical energy.
¨ÉfP ±QAiÄ£Ä «zÄvï ±QAiiÁV ¥jªwð¸ÄªÀ ¸Áz£z CAzªÁz avÀæ£Ä §gÄj

34. State the law of conservation of momentum. "The escape velocity on the earth is 11.2km/s" what does it mean? How are orbital and escape velocities related to one another? At what height geostationary statellite is launched. 4 x 3 = 12
¸AªÃU ¸AgPuÁ vvªÁ£Ä ¥ÀæªÁ¢¹ ¨Æ«ÄAiÄ ªÄÃ¯ «ªÀÃZ£Á ªÃU ¸PArU 11.2 Q.«ÄÃ. Ezg CxðªÃ£Ä? ವಿಮೋಚನಾ ವೇಗವು ಕಕ್ಷಾ ವೇಗದೊಡನೆ ಹೇಗೆ ಸಂಬಂಧವನ್ನು ಹೊಂದಿದೆ? ಭೂಸ್ಥಿರ ಉಪಗ್ರಹವನ್ನು ಎಷ್ಟು ಎತ್ತರದಲ್ಲಿ ಸ್ಥಾಪಿಸಬೇಕು?

35 How does a protostar attain the steady state? What is a neutron star?
D¢ £PvÀæ ¹gÀ¹wAiÄ£Ä ºÃU v®Å¥Ävz? £ÀÄmÁÄæï £PvÀæJAzgÃ£Ä?

36. Draw a neat diagram of each of the following
1. Blast furnace used to extract iron 2. Electrolytic refining of copper.
EªÀU¼° ¥ÀæAiÆAzPÀÄ CAzªÁz avÀæ£Ä §gÄj.
1. P©tz Gzgtz° §¼¸ÄªÀ HzÄ PÄ®ÄªÄ 2. ತಾಮ್ರದ ವಿದ್ಯುತ್ ವಿಶ್ಲೇಷಣಾ ಶುದ್ಧೀಕರಣ

BIOLOGY
fÁªÀÄ¸À

I. FOUR ALTERNATIVES ARE GIVEN TO EACH STATEMENT CHOOSE THE CORRECT ANSWER AND WRITE IN THE SPACE PROVIDED
¥ÀæAiÆAzÄ ªÁPÀPÀÄ £Á®Ä DAiÄU¼£Ä ¤Ãq¯ÁVz. ¸j Gvgª£Ä DAiÄ ªiÁr PÀngÄª ¸¼z®° §g¬Äj.

1. One of the following statements is true. 1 x 5 = 5
a) Ragi plant has parallel venation and cotyledon raises above the soil during germination.
b) Ragi plant has parallel venation and cotyledon remains below the soil during germination.
c) Ragi plant has reticulate venation and cotyledon remains below the soil during germination.
d) Ragi plant has reticulate venation and cotyledon raise above the soil during germination.
F P¼V£ªÀU¼° MAzÄ ªÁPÀ ¸jAiiÁVz
C) gÁV ¸¸ªÀ ¸ÄªÁ£ÁAvg £Á¼ «£Á¸ ºÀÆA¢zÄ, ©Ãd ªÀÆ¼AiÄÄªÁU ©Ãdz¼ ¨Æ¸gz ªÄÃ¯ÁUP §gÄvz.
D) gÁV ¸¸ªÀ ¸ÄªÁ£ÁAvg £Á¼ «£Á¸ ºÀÆA¢zÄ, ©Ãd ªÀÆ¼AiÄÄªÁU ©Ãdz¼ ¨Æ¸gz P¼U G½AiÄÄvz..
E) gÁV ¸¸ªÀ eÁ®§Az £Á¼ «£Á¸ ºÀÆA¢zÄ, ©Ãd ªÀÆ¼AiÄÄªÁU ©Ãdz¼ ¨Æ¸gz P¼U G½AiÄÄvz..
F) gÁV ¸¸ªÀ eÁ®§Az £Á¼ «£Á¸ ºÀÆA¢zÄ, ©Ãd ªÀÆ¼AiÄÄªÁU ©Ãdz¼ ¨Æ¸gz ªÄÃ¯ÁUP §gÄvz.

2. A person is advised not to donate blood after being tested for ELISA, because he is infected by
a) HIV B) HBV c) HSV d) SIV
M§ ªÀQAiÄÄ 'J°¸Á' ¥jÃPU M¼¥l £Avg Dv£Ä gPzÁ£ ªiÁqzAv ¸®º ¤Ãq¯ÁVz. KPAzg CªÀ¤U vU°gÄª ¸ÆÃAPÄ
C. ºZï L « D.) ºZï.©.« E. ºZï. J¸ï. «. F. J¸ï.L.«.

3. After being pricked by a thorn, a boy withdraws his leg immediately. The center of this action is
a) Cerebrum b) Cerebellum c) Spinalcord d) Hypothallamus
ºÀqÀU£Æ§ ªÀÄ¼À vÀ½z vPt PÁ®£À »AzP J¼zÀPÀÆ¼ÀvÁ£. F QæÀÄAiÀ PÃAzæ
ಅ) ಮಹಾಮಸ್ತಿಷ್ಕ ಆ) ಅನುಮಸ್ತಿಷ್ಕ ಇ) ಮಿದುಳು ಬಳ್ಳಿ ಈ) ಹೈಪೋಥಲಾಮಸ್

4. Vegetative reproduction found in multicellular alage is a natural process of
a) Cloning b) DNA finger printing c) Genetic engineering d) Recombining DNA
§ºÀPÀÆÃ²AiÀ ±ÉªÀ®U¼° £qAiÀÄª PÁAiÀd jÃwAiÀ ¸AvÁ£ÆÃvw ¥ÀæÀÄAiÀÄ ¸Á¨Á«P
C) PÀÆÃ¤AUï D) r.J£ï.J. ¨g¼ZÀ E) v½ vAvæÁ£ F) ¥ÁÉgï ¸AAiÀÄÃfv r.J£ï.J.

5. Blood report of a 40 year old person indicates high glucose level. He may be at risk of getting.
a) Glaucoma b) Cataract c) Astigmatism d) Retinopathy
ನಲವತ್ತು ವರ್ಷದ ವ್ಯಕ್ತಿಯ ರಕ್ತ ಪರೀಕ್ಷೆಯಲ್ಲಿ ಗ್ಲೂಕೋಸ್ ನ ಪ್ರಮಾಣವು ಹೆಚ್ಚಾಗಿರುವುದು ಕಂಡು ಬರುತ್ತದೆ. ಆತ ಈ ರೋಗಕ್ಕೆ
vÀvÁUÀª ¸Ázv ºZÁVjvz.
ಅ) ಗ್ಲಾಕೋಮಾ ಆ) ಮೋತಿಬಿಂದು ಇ) ಅಸಮ ದೃಷ್ಟಿದೋಷ ಈ) ರೆಟಿನೋಪತಿ

6. MATCH PART 'A' WITH PART 'B' : 1 x 4 = 4

A	B
1. Areolar tissue KjAiÀÄ¯Ágï CAUÁA±	a) Provides frame work to Spleen UÀ®P ZËPl£À MzV¸Ávz.
2. Ligament vAvÀPlÀ	b) attaches muscles to bones ¸ÁAiÀÄU¼£À ªÀÆ¼U½U §A¢¸Ávz.
3. Adipose tissue Cr¥ÆÃ¸ï CAUÁA±	c) digests toxic substances £AdÀ ¥zÁxðU¼£À fÃtð¸Ávz.
4. Tendones ¸ÁAiÀÄ gdÀ	d) provides frame work to entire body ErÃ zÃºP ZËPl£À MzV¸Ávz.
	e) attaches one bone to another MAzÀ ªÀÆ¼AiÀ£À E£ÆAzÀ ªÀÆ¼U §A¢¸Ávz.
	f) avoids friction in joints ಕೀಲುಗಳಲ್ಲಿ ಘರ್ಷಣೆಯನ್ನು ತಪ್ಪಿಸುತ್ತದೆ.
	g) acts as a shock absorber DWÁv »ÃgPzAv ªwð¸Ávz.

ANSWER THE FOLLOWING QUESTIONS IN A WORD OR A SENTENCE
F P¼V£ ¥ÀæU½U MAzÀ ¥z CxªÁ MAzÀ ªÁPÉz° Gvj¹

7. What is biotechnology ? 1 x 4 = 4
eÉ«P vAvæÁ£ JAzgÃ£À?

8. Which important characteristic feature of selaginella depicts that it is highly evolved than Riccia ?
¸¯Áf£¯Á jQAiiÁVAv ºZÀ «PÁ¸UÆArz J£À¹ÉzÉ£À ¥Á¶Pj¸Àª ¥ÀæÀÄR UÀt®Pt AiiÁªÉzÀ?

9. Ramya experiences numbness in herlimbs due to accumulation of watery fluid, name the disease and adulterant that has caused it.
gªÀ¼ PÉPÁ®ÀU¼° ¤Ãj£Avº zæ ±ÃRgu AiiÁVgÀªÉzjAz eÆÃªÀÄ »r¢gÀvz. Cª¼À §¼®ÀwgÀª gÆÃU

AiiÁªÀzÀ? EzPÀ PÁgÀtªÁzÀ P®¨gPÀªÀ¸ÀÄªÀ£À¸À ºÀ¸À¸À¹?

10. Why is goiter called an endemic disease ?
U¼UAq gÆÃUªÀ£À¸À ¸ÁÀ¤PÀªÁÀ¢ JAzÀ KP PgAiÀÄvÁg?

ANSWER THE FOLLOWING IN 2 OR 3 SENTERNCES EACH
JgqÀ ªÀvÀ ªÀÆgÀ ªÁPÀU¼À Gvj¹

11. How are ear and throat connected ? What is its advantage ? 2 x 6 = 12
Q« ªÀvÀ UAl®Ä ºÃU ¸A¥Pð ºÆA¢ª? EzjAzÁUÀª ¥ÀæÆÃd£ªÃ£Ä?

12. Raju resides in an area where not much of lichens are found. List any four health hazards he may be suffering from
P®Ä ºÆU¼Ä ºZÁV E®z ¥ÀæÃ±À° gÁdÄ ªÁ¹¸ÄwzÁÀ£. CªÀ£Ä §¼®Äwg§ºÄzÁz £Á®ÄÀ DgÆÃUÀ¸ªÄ¸À¼À£À¸À ¥ÀnÀ ªiÁr.

13. Explain the structure of HIV in 20of 3 sentences.
ºZï L « gZ£AiÄ£À¸À JgqÄ CxªÁ ªÀÆgÀ ªÁPÀU¼À «ªj¹.

14. Mention one function of the following.
a) Sclereids b) Companion cells
P¼PAqªÀU¼ MAzÄ PÁAiÄðª£À¸À w½¹
J) ¹÷gÀqï ©) ¸AUÁw fÃªPÆÃ±

15. How can vanaspathi in ghee be detected ?
vÄ¥À° ª£¸w EgÄ«PAiÄ£À¸À ºÃU ¥v ºZ§ºÄªÀzÄ?

16. A student has uprooted a weed plant in the school garden. The student infers that it is a dicot plant. Support the inference.
M§À «zÁÀyðAiÄÄ v£À¸À ±Á¯Á vÆÃlz° MAzÄ P¼À ¸À¸À¸À¹ª£À¸À ¨ÃgÄ ¸ªÄÃv QvÄ £ÆÃq¯ÁV CzÄ ¢z¼À ¸À¸À¸ªAzÄ wÃªiÁð£PÀ §gÄªÀzÁzg C wÃªiÁð£PÀ ¤ªÄ¸À ¥Ä¶ÃPgÀt ¤Ãr.

ANSWER THE FOLLOWING
P¼V£ ¥ÀæÀU½U Gvj¹.

17. How does electrochemical fixation take place during nitrogen cycle ? 3 x 2 = 6
£À¸ÀmÆÃæd£ï ZPæ° «zÄÀvï gÁ¸ÁAiÄ¤P ¹¸ÀjÃPgÀtªÀ ºÃU GAmÁUÄvz?

18. Draw a diagram to show external features of fish and label any two parts
«ÄÃ¤£À ¨Á°À gZ£AiÄ£À¸À vÆÃj¸Äª avÀæ£À¸À §gzÄ AiiÁªÀzÁzgÆ JgqÄ ¨ÁUU¼£À¸À UÄgÄw¹.

19. Draw a diagram of vertical section of human brain and label any four parts. 4 x 1 = 4
ªiÁ£ª£ «ÄzÄ½£ ¤Ã¼bÃz £ÆÃlz avÀæ£À¸À §gzÄ AiiÁªÀzÁzgÆ £Á®ÄÀ ¨ÁUU¼£À¸À UÄgÄw¹.

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Model question paper - II

PART - I

PHYSICS & CHEMISTRY

¨ÉÆÃzÀ¸À ªÀiÁ¹ÃÀgÀ¸ÀAiÀÄÄ£À¸À

For Each multiple choice question four alternatives are given. Out of these alternatives choose the correct answer and write the answer in the space provided 1 x 10 = 10

1. M§ CmÆÃªÆ¨É¯ï CAUr¬ÄAz v£ ªÁº£ªÄ zÄg¹ ªiÁq®Ä Qr¨uAiÄ£Ä RjÃ¢¸ÄvÁ£.
   D ªÀQ ºÆA¢gÄª ªÁº£z°gÄª JAf£ï
   1) ¥mÆÃ¯ï JAf£ï 2) r¹Ã¯ï JAf£ï
   3) §»zðº£ JAf£ï 4) CAvzðº£ JAf£ï
   A person buys a spark plug from a automobile shop. The engine present in his vehicle is
   (1) Petrol engine (2) Diesel engine
   (3)External combustion engine (4) Internal combustion engine.

2. ¸Á§Æ£Ä vAiiÁjPAiÄ° G¥ Gv£¢Az ¸Á§Æ£Ä£Ä ¨Ã¥ðr¸®Ä §¼¸Äª ª¸Ä
   a) ¸ÆÃrAiÄªiï ºÉqÁ¯ï qï b) ¸ÆÃrAiÄªiï PÆÃgÉqï
   c) ¥ÁæPÆ§Ä d) V¸gÁ¯ï
   The substance used to separate the soap from the by product during saponification is
   (1) Sodium hydroxide (2) Sodium chloride
   (3) Animal fat (4) Glycerol

3. rÃ¸¯ï JAf£ï£° rÃ¸¯ï E£ïePï DUªÀzÄ
   a) ¸A¦Ãq£Á ºÆqvz PÆ£AiÄ° b) ¸A¦Ãq£Á ºÆqvz DgA¨z°
   c) ¨ÄQºÆqvz DgA¨z° d) ¨ÄQºÆqvz PÆ£AiÄ°
   In diesel engine diesel is injected into the cylinder
   (1) At the end of compression stroke (2) At the beginning of compression stroke
   (3) At the beginning of intake stroke (4) At the end of intake stroke

4. PÉvP gvÀU¼ÆA¢U «Ä±ÆÁVgÄª £É¸VðP gvÀU¼£Ä ¥v ªiÁr ¨Ã¥ðr¸®Ä G¥0iÆÃV¸§ºÄzÁz «zÄvï PÁAwÃAiÄ vgAUz DªÉw
   1) ¸ÆP÷ vgAUz DªÉwVAv Prªä Eg¨ÃPÄ 2) zÉUÆÃZg ¨¼Q£ DªÉwVAv Prªä Eg¨ÃPÄ.
   3) zÉUÆÃZg ¨¼QVAv ºZÄ ªÄvÄ JPï-Qgtz DªÉwVAv Prªä Eg¨ÃPÄ
   4) £Ãg¼ÁwÃv QgtQÀAv Prªä DªÉw Eg¨ÃPÄ
   The frequency of electromagnetic radiation used to detect & separate the real gems Which are mixed with artificial gems.
   (1) Should be less than that of microwaves. (2) Should be less than that of visible light.
   (3) Should be greater than that of visible light & less than that of X-rays
   (4) Less than that of ultraviolet waves

5. QÃmï DlUÁg ²æÃÁAv£Ä J¸z ZAr£ ªÃUª£Ä C¼AiÄ®Ä G¥AiÆÃV¸§ºÄzÁz ¸Áz£
a) SONAR b) gÃqÁgï U£ï c) ECG d) RADAR
The device used to find the velocity of a ball bowled by cricketer Srishanth
(1) SONAR (2) RADAR gun (3) ECG (4) RADAR

6. M§£ §mAiÄ°gÄª D«ÄÃAiÄ P¯AiÄ£Ä vUAiÄ®Ä EzÄ ¸ÆP
a) ¸ÆÃrAiÄªïï ¥Á«ÄmÃmï b) ¸ÆÃrAiÄªïï N°AiÄÃmï
c) ¸ÆÃrAiÄªïï qÄq¸É¯ï ¸¯Ãmï d) ¸ÆÃrAiÄªïï ¹ÃAiÄgÃmï
Which of the following is used to remove acidic stain on clothes
(1) Sodium palmitate (2) Sodium oleate (3) Sodium dodecyl sulphate (4) Sodium stearate

7. ¨ÉfP «zÄvï ¸ÁªgZ° ¨ÆgÁ£ï£ ¸g¼ÄU¼ PÆgv GAmÁzg DUÄª ¥juÁªÄ
1) QæiÁPÁj ¸ÆÃl¸Ävz 2) ¨ÉfP QæiÄ ¤®Ävz
3) U¨ð zæ¸Ävz 4) «zÄvï Prª Ä GvwAiiÁUÄvz
In a nuclear power plant the scarcity of boron rods results in
(1) Bursting of reactor (2) Nuclear reaction is completely stopped
(3) Melting of core (4) Electricity generation decreases

8. ªÄ¸Ægz vAiiÁjPAiÄ° ¹Ã¸z UÁd£Ä G¥AiÆÃV¸®Ä PÁgt
1) CvÄZ ¥Ágz±ðPªÁVgÄªÄzÄ ªÄvÄ ºa£ ªQæëª£ ¸ÆZÄAP EgÄªÄzÄ
2) ¨ÉfP «Qgt »ÃgÄªÄzÄ ªÄvÄ CvÄZ ¥Ágz±ðPªÁVgÄªÄzÄ
3) ºa£ ªQæëª£ ¸ÆZÄAP EgÄªÄzÄ ªÄvÄ¨ÉfP «Qgt »ÃgÄªÄzÄ
4) ºa£ Mvqª£Ä vqAiÄÄªÄzÄ ªÄvÄ CvÄZ ¥Ágz±ðPªÁVgÄªÄzÄ
The reason for using lead glass in the preparation of lenses is ,it is
(1) Highly transparent and has high refractive index
(2) Absorbs radiation and highly transparent
(3) Has high refractive index and absorbs radiation
(4) Withstands high pressure and highly transparent

9. ZAzæiÁ£-1 P¤zÃð±£ PÆq®Ä G¥AiÆÃV¹z «Qgt
1) X-Qgt 2) CªPA¥Qgt 3) £Ãg¼ÁwÃv Qgt 4) ¸ÆP÷vgAU
The electromagnetic radiation used to direct chandrayana-1 is
(1) X-ray (2) Infrared ray (3) Ultraviolet ray (4) Microwave

10. MAzÄ CUÄ¤ðPï ¸AAiÄÄP ª¸Ä«£ CtÄvÆP 78. Czg°gÄª ªÄÆ®ª¸ÄU¼Ä EAUÁ¯ ªÄvÄ d®d£P Dzg, Czg CtÄ¸Ævæ
a) C_4H_{10} b) C_6H_{14} c) C_6H_6 d) $C_{12}H_{26}$
The molecular weight of an organic compound is 78, the elements present in it are carbon and hydrogen ,then its molecular formula is
a) C_4H_{10} b) C_6H_{14} c) C_6H_6 d) $C_{12}H_{26}$

Fill in blanks/©l ¸¼ vÄA©¹j 1 x 3 = 3

11. MAzÄ ¯ÆÃºª£Ä PÁ¬Ä¹zÁU Czg gÆÃz ------ DUÄvz
When a metal is heated its resistance_____

12. ±¤AiÄ GAUÄg gZ£AiÄ£Ä w½AiÄ®Ä ¸Ázï ªÁVgÄ ªïzÄ _____ ¥juÁªÄ¢Az
The effect that helps us to know about rings of Saturn is _____

13. £Á®Ä ºÉqÀÆ£ï ©ÃdU¼Ä ¸«Ä®£UÆAqÄ MAzÄ »Ã°Aiiªiï ©ÃdªÁV ±Q ©qÄUqAiiÁUÄ ªïzÄ _____ ¸g¥½ QæÄAiÄ°
The chain reaction in which four hydrogen nuclei fuse into one helium nucleus with the liberation of energy is _____

14. ºÆA¢¹ §g.

A	B
1 J¯ï.¦.f/L.P.G	F yÃ£ï/Ethane
2. ¹.J£ï.f/C.N.G	£Ãg ¸g¥t/Straight chain
3. L¸ÆÃ ¥AmÃ£ï/Iso pentane	F xÉ¯ï ªÄgïPÁ¥£ï/Ethyl mercaptan
4. ¥Ág¦£ï/Paraffine	C_nH_{2n+2}
	C_5H_{10}
	CH_4
	C_6H_6

F P¼V£ ¥æÃU½U MAzÄ ªÁP¸ z¯ Gvj¹
Answer the following in One sentence 1 x 6 = 6

15. PÃAzÁ®ªÄÄR §® JAzgÃ£Ä ?
What is centripetal force?

16. ¸ªÄv® g¸AiÄ wgÄ«£° g¸AiÄ£Ä ºÃU ga¹gÄvÁg?
How does the roads are constructed at the bends on a level road?

17. ¸Ëg CrU M¯AiÄ ¥nUU UÁf£ ªÄÄZ¼«gÄvz. PÁgt PÆr.
Solar cooker is covered with a transparent plate of glass -Give reason.

18. º§®£ ¤AiÄªÄª£Ä ¤gÆ¦¹.
State Hubble's law.

19. eÁ£ÄªÁgÄU¼£Ä ¸ÁPÄª ªÀQ ±Q ©P¸l£Ä ¥jºj¸ÄªïzP¸ ¸A§Az¥lAv vUzÄPÆ¼§ºÄzÁz PæÄªÃ£Ä ?
Write the remedial measure that can be taken by a cattle raring person in order to minimize the energy crisis.

20. ¤Ãj£ Uq¸Äv£P¸ PÁgtªÁz AiiÁªïzÁzgÆ 4 ®ªtU¼£Ä º¸j¹
Name any four salts that cause hardness of water.

F P¼V£ ¥æÃU½U Gvj¹.

21. r.¹. ªÆÃmÁgï£ avæ®r¹ ¨ÁUU¼£Ä º¸j¹. 2 x 9 = 18
Draw a neat labelled diagram of DC Dynamo.

22. J.¹. qÉ£ªÆÃ ªÀvÀ r.¹ qÉ£ªÆU¼ £qÀ«£ JgqÀ ªÀvÀ¸U¼£À w½¹.
Write any two differences between AC Dynamo and DC Dynamo

23. F P¼V£ªÀU¼£À ¸j¹.
1. ¥gªiÁtÄ«£ E_1 PPAiÄ°z E¯PÁ£ï E_2 PPU fVAiÄªÀ QæÃiÄ
2. ¥gªiÁtÄ«£ E_2 PPAiÄ°z E¯PÁ£ï E_1 PPU fVAiÄªÀ QæÃiÄ.
3. ¥gªiÁtÄU¼£À PrªÄ ±Q ¹wÃ¬ÄAz C¢P ±Q ¹wU Kj¸ÄªÀ ¥QæÃiÄ
4. ¥gªiÁtÄU¼£À C¢P ±Q ¹wU Kj¸®Ä ¨Á°¸ ªÄÆ®U½Az ±QAiÄ£À MzV¸ÄªÀ ¥QæÃiÄ
Name the following process
(1) In an atom, an electron from an orbit E_1 raises to an orbit E_2
(2) In an atom, an electron from an orbit E_2 jumps to an orbit E_1
(3) Atoms are raised from lower energy level to higher energy level
(4) Supplying energy from external source, to raise the atoms to higher energy level

24. gÃr0iÆÃ UÁæPz ¨ÁPï £P ©r¹
Draw the block diagram of a simple radio receiver.

25. ಬಹಿರ್ದಹನ ಯಂತ್ರದ ನಿಷ್ಕಾಸ ಹೊಡೆತವನ್ನು ಸೂಚಿಸುವ ಅಂದವಾದ ಚಿತ್ರವನ್ನು ಬಿಡಿಸಿರಿ.
Draw a sketch of external combustion engine showing exhaust stroke.

26. dªÄð£ï ¨½ ªÀvÀ PAZÀ EªÀU¼£À vAiiÁj¸®Ä ¨ÃPÁUÄª WlPU¼£À, F P¼V£ªÀU½Az Dj¹ §g¬Äj.
vÁªÄæ¸vÄ, vªg, ¤PÀ¯ï
Choose the components used to prepare german silver and bronze,from the following
Copper, Zinc, Tin, Nickel.

27. ¹°PÁ£ï PÁ¨ÉðqïÉ£À ºÃU ¥qAiÄ§ºÄzÄ? ¸«ÄÃPgtzÆA¢U «ªj¹
How silicon carbide is obtained from silicon? Explain with the equation

28. ¥Á°ªÄjÃPgt JAzgÃ£Ä ?F P¼V£ªÀU¼ ªÆ£ÆÃªÄgïU¼£À ¸j¹. 1) m¥Á£ï 2) £É¯Á£ï
What is polymerization? Name the monomers of the following. (1) Teflon (2) Nylon.

29. Uq¸Ä ¤Ãj£ JgqÀ C£Á£ÄPÆ®U¼£À w½¹
Write any two disadvantages of hard water.

F ¥æÃU½U Gvg §g¬Äj/Answer the following questions

30. UæÃAiÄ Z®£U ¸A§A¢¹zAv P¥g£ ªÄÆgÄ ¤AiÄªÄU¼£À §g¬Äj 3 x 4 = 12
State Kepler's three laws of planetary motion..

31. ¤ÃªÀ ªÉzÀgÁzg F P¼V£ ¸Az¨ðz° AiiÁª L¸ÆÃmÆÃ¥ï §¼¹ aQvAiÄ£À PÆqÄ«j.
C) M§ ªÀQ PÁ£gï¤Az §¼Ä®ÄwzÁ£ D) M§£ xÉgÁ¬Äqï UÆy H¢PÆArzÄ, ¨¼ªtU PÄApvªÁVgÄvz
Imagine that you are a doctor by using which isotope you will treat.
(1) A person is suffering from Cancer (2) Growth of a person is retarded due to bulging of Thyroid gland

32. a) gÀSÁ¤¸gt gÀÆÃ»vª£Ä ºÀU ¥qAiÄ§ºÄzÄ ?
    b) gÁªÄ£ï ¥juÁªÄPÀ, gÁ¯ ZzÄgÄ«PUÀ EgÄª ªÀvÁ¸U¼Ã£Ä ?
    a) How can we obtain a line emission spectrum?
    b) Write the differences between Rayleigh scattering and Raman effect

F P¼V£ ¥ÀæU½U Gvg §g¬Äj/Answer the following questions.

33. ¨ÉfP «zÀÄvï ¸ÁªÀgz CAzªÁz avÀæ§gzÄ ¨ÁUU¼£Ä UÄgÄw¹j.
    Draw a neat labelled diagram of nuclear reactor and label the parts.

34. KPºAv gÁPmï£ §z®Ä §ºÄºAv gÁPmïU¼£Ä G¥UÀæU¼ GqÁªuAiÄ° G¥AiÀÄÃV¸®Ä PÁgt ªÃ£Ä?
    gÁPÃmï£ GqÁªuAiÄ° UªÄ¤¸ ¨ÃPÁz 2 ªÀºÁjP CA±U¼ÁªÀªÀ ? 4 x 3 = 12
    Why multistage rockets are used to launch the satellite instead of single stage rockets?
    Write any two practical aspects need to be considered while launching a rocket.

35. vgz UÄZ ªÄvÄ UÀÆÃ°AiÄ UÄZU½VgÄª 2 ªÀvÁ¸U¼£Ä w½¹. F P¼V£ªÀU¼£Ä «ªj¹
    1) ±Ãv PÄ§ 2) PA¥ÀzÉv
    Write any two differences between open and globular star clusters. Explain the following
    (1) White dwarf (2) Red giant

36. H zÄPÄ®ÄªÄAiÄ CAzªÁz avÀæ®r¹ ¨ÁUU¼£Ä º¸j¹. PÄ®ÄªÄAiÄ ¨Ãg ¨Ãg Jvgz°gÄª vÁ¥ª£Ä UÄgÄw¹
    Draw the neat labelled diagram of blast furnace and mark temperature range at different heights inside the furnace .

fÃªÀÁ¸À

§ºÄ DAiÄÄAiÄ ¥ÀæU¼Ä

For Each multiple choice question four alternatives are given. Out of these alternatives choose the correct answer and write the answer in the space provided 1 x 5 = 5

1) F ¸¸ªÀ DªÉv ©Ãd¸¸ÉP GzÁºguAiiÁVz
   1) ¸gÆÃUÉgÁ 2) ¥ÀÄÉÃjAiiÁ 3) ¸ÉPÁ¸ï 4) zÁ¸ªÁ¼
   This plant is an example for Angiosperm
   a) Spyrogyra b) funaria c) cycas d) hibiscus.

2) F P¼V£ªÀU¼° vÄvÄð ¥j¹wAiÄ ºÁªÆÃð£ï EzÁVz
   1) E£ï¸Ä°£ï 2) xÉgÁQ£ï 3) Crà°£ï 4) ¨¼ªtUAiÄ ºÁªÆÃð£ï
   Emergency harmone among the following is
   a) Insulin b) Thyroxin c) adrenaline d) Growth hormone.

3) '¥gÁªwðv ¥ÀæQæÄ'AiÄ ¤Rg ªÁ¸¡AiÄÄ EzÁVgÄvz
   1) ¥ÀæQæÄU vP ¥ÀæÉÃz£ 2) ¥ÀæÉÃz£U vP ¥ÀæQæÄ-eÁ£Á£Ä¨ª C£Avg
   3) ¥ÀæÉÃz£ ªÆz®Ä; eÁ£Ä¨ªz £Avg ¥ÀæQæÄ 4) eÁ£Á£Ä¨ª ªÆz®Ä ¥ÀæÉÃz£ ªÄvÄ ¥ÀæQæÄ C£Avg

This is the scope of reflex action

a) stimulus to the response
b) response to the stimulus before getting experience
c) Stimulus first; response after getting experience
d) experience first, Stimulus and response afterwords

4 ºZï.L.«AiÄÄ gmÆÃæ¸g¸ï DVgÀvz KPAzg

1) ºZï.L.«AiÄ° j ª¸ïð mÁæQæ£ï £qAiÄÄvz
2) ºZï.L.«AiÄ° mÁæQæ£ï £qAiÄÄvz
3) ºZï.L.«AiÄ° j ª¸ïð mÁæQæ£ï £qAiÄÄª¼¢®
4) ºZï.L.«AiÄ° mÁæQæ£ï £qAiÄÄª¼¢®

HIV is a retrovirus because

a) It undergoes reverse transcription
b) It undergoes transcription
3) It doesn't undergo reverse transcription.
d) It doesn't undergo transcription

5. C¥gÁ¢AiÄ£Ä¾ ¥v ºZÄª° e¸«PvAvæÁ£z F «¨ÁUª¼ ¤RgªÁV ¸ºÁAiÄPªÁU§®zÄ

1) v½vAvæÁ£ 2) CAUÁA± P¸¶ 3) ¨g¼ZÄ vAvæÁ£ 4) vzÆæ¸¸¶

The aspect of biotechnology which helps in the detection of culprits in the forensic science

a) Genetic Engineering b) Tissue culture c) Finger print technology d) Cloning

6. ºÆA¢¹ §g¬Äj 1 x 4 = 4

A	B
1. ªzð£ CAUÁA±	¤ÃgÄ ªÄvÄ DºÁg ¸AUæ¸Äª CAUÁA±
Meristamatic tissue	water and food storage tissue
2. P¸®A	gPP CAUÁA±
Xylem	Protective tissue
3. ¥ÇÃAiÄªï	DzÁg CAUÁA±
phloem	Supportive tissue
4. ¥Á¼gAP¸ªiÁ	¨¼ª tUPÁgP
Parenchyma	Growth tissue
	¤Ãg£Ä¾ »ÃgÄª CAUÁA±
	Water absorbing tissue
	DºÁgª£Ä¾ ¸ÁV¸Äª CAUÁA±
	Food conducting tissue
	¤Ãg£Ä¾ ¸ÁV¸Äª CAUÁA±
	Water conducting tissue

F P¼V£ ¥æÃU½U MAzÄ ªÁP¸z° Gvj¹

7. ªiÁ£ª£Ä P±ÃgÄP KP ? 1 x 4 = 4

Man is a Chordate why ?

8. ªiÁ£ª£ £qÄQ« ªÄvÄ ºÆgQ«U¼° ªÁAiÄÄ«£ Mvqª¼ KP ¥g¸g ¸ªiÁªÁVg ¨ÃPÄ ?

Why should be the air pressure in middle and outer ear equal in man ?

9. P®¨gPUÆ¼UÁz DºÁg ¥zÁxðU½Az GAmÁUÄª JgqÄ PÁ¬Ä¯U¼£Ä¾ º¸j¹.

Name any two diseases caused due to the consumption of adultrated food.

10. e¦«P vAvæÁ£z ªÁ¸SÁ¸ÀÄ£À §g. 2 x 6 = 12
Define biotechnology

F P¼V£ ¥æ¸U½U Gvj¹.

11. ¸¸gÁd¸z° DªÉv ©Ãd ¸¸U¼£À Cw ºZÄ «PÁ¸ª£À ºÆA¢z ¸¸U¼AzÄ KP PgAiÄ¯ÁVz ?
Angiosperms are considered as the most evolved plants in the plant kingdom why ?

12. PÉ®A ªÄvÄ ¥ÇÃAiÄªiïU¼°gÄª °VÃ£ï ©wAiÄÄP fÃªPÆÃ±U¼£À º¸j¸Ä.
Name components of xylem & phloem which have lignified wall.

13. ಮಹಾಮಸ್ತಿಷ್ಕದ ಕಾರ್ಟಿಕ್ಸನ ದಪ್ಪ ಮತ್ತು ಮಡಿಕೆಗಳು ಹೆಚ್ಚಾದಂತೆ ಮಾನವನ ಬುದ್ಧಿವಂತಿಕೆಯು ಹೇಗೆ ಹೆಚ್ಚಾಗುತ್ತದೆ ?
How does the intelligence of man increase as thickness & convolutions of cerebral cortex increase ?

14. KqïU vÄvÁz ªÁQU £Æªª ÆÃ¤AiÄ §AzÁU CzÄ KP UÄtªÁUÄª¢® ?
Why pneumonia is not cured in an individual suffering from AIDS ?

15. DºÁgz P®¨gP JAzgÃ£Ä ? DºÁgz P®¨gPAiÄ£À vqAiÄ®Ä ¸PÁðgª PÉPÆAq JgqÄ PæÄU¼Ä AiiÁªª ?
What is food Adulteration ? Write any two precautions taken by the government to control food adulteration.

16. EAUÁ®z ZPæ¥j¥Çtð ZPæ¤¸®Ä PÁgtÃ¨ÆvªÁz ªÄgÄZQæPgtz ºAvU¼Ä AiiÁªª ?
What are the different stages of recycling which are responsible to consider carbon cycle as perfect cycle ?

F P¼V£ªU¼£À Gvj¹ 3 x 2 = 6

17. ¸Á¹ª Vqz avæ£À ©r¹ ¨ÁUU¼£À º¸j¸Ä
Draw a neat diagram of mustard plant and label the parts.

18. F P¼V£ªU¼£À ¥j¥Çtð ªÄvÄ C¥j¥Çtð fÃªgÁ¸ÁAiÄ¤P ZPæ¼£ÁV ªVÃðPj¹, CªU¼Æ¼V£ MAzÄ ¥æÄR ªvÁ¸ª£À §g.
1) EAUÁ®z ZPæ 2) ¸Ágd£Pz ZPæ 3) gAdPz ZPæ 4) UAzPz ZPæ
Classify the following into perfect & imperfect biogeochemical cycle and write one main difference between them.
a) Carbon cycle b) Nitrogen cycle c) Phosphorous cycle c) Sulphur cycle

19. ªiÁ£ª£ ªÄzÄ½£ ¤Ã¼bÃzz avæ£À ©r¹ ¨ÁUU¼£À º¸j¹
Draw a neat diagram of L.S of human brain and label the parts. 4 x 1 = 4

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Model question paper - III

PART - I

PHYSICS & CHEMISTRY

¨ÉÆÃzÀ¸À ªÀÄvÀÄÀgÁ¸ÁAiÀÄÄ£À¸À

For Each multiple choice question four alternatives are given. Out of these alternatives choose the correct answer and write the answer in the space provided 1 x 10 = 10

F P¼V£ ¥ÀæªÀÄUÀ½Az ¸jAiiÁz GvgU¼£À Dj¹ §g¬Äj.

1) Cª½ £Ugz JgqÄ UU£ ZÄA© PlqU¼ £qÄª PÃ§¯ï mÁæ¸Á¦¸¨ÃPÁVz. D PlqU¼ £qÄ«£ zÀÆgª£À ¤RgªÁV C¼AiÄ®Ä C£¬Ä¸¨ÃPÁz vv
   1) gÀrAiÀÄÃ bÁAiÄ©A§£ 2) ¯Ã¸gï gÀAfAUï vAvæÁ£
   3) zÀw«zÀvï ¥juÁªÄ 4) qÁ¥gï ¥juÁªÄ
   Two multistoried buildings in twin cities are to be connected with a cable trolley. Principle applied to measure the accurrate distance between them is
   (1) Radiography (2) LASER Ranging (3) Photoelectric effect (4) Doppler Effect

2) ಯಂತ್ರದೊಳಗಿನ ರಚನೆಯಲ್ಲಿನ ದೋಷವನ್ನ ಪತ್ತೆ ಹಚ್ಚಬೇಕಾಗಿದೆ. ಈ ಕಾರ್ಯಕ್ಕೆ ಬಳಸಬಹುದಾದ ವಿದ್ಯುತ್ಕಾಂತೀಯ ತರಂಗ
   1) gÀrAiÀÄÃ 2) CªPÀ¥À 3) Cw £Ãg¼ 4) JPï-Qgt
   We have to detect a flaw in a machine. The electromagnetic radiation used for this Technology is
   (1) Radiowave (2)Infrared ray (3) Ultraviolet ray (4) X-ray

3) AiÀÄÄP ¥ÀæiÁtz° EAz£ ªÀvÄ UÁ½AiÄ£À «Ä±æªiÁqÄª JAf£ï£ ¨ÁU
   1) ¦¸£ï 2) PÁ¨ÆÃðgÀlgï 3) ¹°Aqgï 4) ¨ÁAiÄgï
   Part of the petrol engine where the air and petrol are mixed in proper proportion is
   (1) Piston (2) Carburetor (3) Cylinder (4) Boiler

4) ಉಷ್ಣ ಎಂಜಿನ್ ನಲ್ಲಿ ಈ ಭಾಗ ಇಲ್ಲದಿದ್ದರೆ ರೇಖೀಯ ಚಲನೆಯು ಭ್ರಮಣೆಚಲನೆಯಾಗಿ ಪರಿವರ್ತಿಸಲ್ಪಡುವುದಿಲ್ಲ
   1) PÁ¨ÆÃðgÀlgï 2) ¸ÁÄzÀæ 3) ªPæAq 4) gÀrAiÄÄlgï
   In a heat engine without this part it is not possible to convert linear motion into rotation
   1) Carburetor 2) Condenser 3) Crankshaft 4) Radiator

5) ªÉzÀgÄ gÆÃVAiÄ U¨ðPÆÃ±z°£ UqAiÄ ©A§ª£À ¥qAiÄ®Ä §¼¸ÄªÀzÄ
   1) £Ãg¼ÁwÃv «Qgt 2) JPï-Qgt 3) UÁªiÁ-Qgt 4) ±æuÁwÃv vgAU
   Doctors use this to get the image of fibroids of uterus
   (1) X-ray (2) Gamma ray (3) Ultraviolet ray (4) Ultrasonic wave

6) F P¼V£ªÀU¼° AiiÁªÀzÄ E®¢zÀg ¨ÉfP QæiÁPÁjAiÄÄ vPt ¥gªiÁtÄ ¨ÁA©£Av ¸Ænº¸Ävz
   1) ¤AiÄÄvæ¸g¼Ä 2) ªÄAzP 3) gPÁ PªZ 4) vA¥ÀPÁj
   If this part is not present in the nuclear reactor then it might function like a nuclear Bomb
   (1) Control rods (2) Moderator (3) Concrete shield (4) coolant

7) ªÁAiÀÄªiÁ°£ªÀ£Ä vqAiÀÄª GzÀÄ± ºÁEA¢gÀªªgÀ CqÀUU §¼¸Äª EAz£
1) ¹ÃªÀ Ju 2) PnU 3) zæ¥mÁæAiÀªï C¤® 4) ¨gt
To prevent the air pollution, one can use this fuel
(1) Kerosene (2) Wood (3) Liquid petroleum gas (4) Dung cake

8) ಬೋರೋಸಿಲಿಕೇಟ್ ಗಾಜನ್ನು ಪ್ರಯೋಗ ಶಾಲೆಯಲ್ಲಿ ಉಪಯೋಗಿಸಲು ಕಾರಣವಾದ ಅದರ ವಿಶಿಷ್ಟಗುಣ
1) ತಾಪವೈಪರೀತ್ಯ ಸಹಿಷ್ಣುತೆ 2) ©zÀgv 3) ¥Ágz±ðPv 4) GZ ªQæ¤gt ¸ÆZÁAP
Which property of the borosilicate glass is the reason for using it in laboratory?
(1) Withstands high temperature fluctuation (2) Brittleness (3) Transparency (4)High refractive index

9) ªiÁdðPz C£¥ÃQÃv UÀt
1) eÉª ²y°ÃAiÀªÁVgÀªÀzÀ 2) D«ÄÃAiÀ ªiÁzÀªÀz° ¸Z UÆ½¸ÄªÀzÀ
3) Uq¸Ä ¤Ãj£° ¸ZUÆ½¸ÄªÀzÀ 4) eÉª²y°ÃAiÀªÁV®¢gÀªÀzÀ
One cannot encourage the use of detergent because of this property
(1) Biodegradability (2) Cleaning in acidic medium (3) Cleans in hard water (4) Non Biodegradability

10) M§ «zÁyðU vAV£ Ju, ¸ÆÃrAiÀªï ºÉqÁæqï, ¸ÆÃrAiÀªï PÆÃgÉqï EªÀU¼£Ä ¤Ãq¯ÁVz. EªÀU½Az CªÀ£Ä vAiiÁj¸ §ºÄzÁzzÀ
1) rleðAmï 2) ¸ÆÃrAiÀªï ¹ÃAiÀgÃmï
3) ¥ÇÃmÁAiÀªï ¥Á«ÄmÃmï 4) ¸ÆÃrAiÀªï PÁ¨ÆÃð£Ãmï
Coconut oil, Sodium hydroxide and Sodium Chloride are given to the student, Using these he can prepare
(1) Detergent (2) Sodium stearate (3) Potasium Palmitate (4) Sodium carbonate

©ngÀª eÁUª£Ä vÄA©j
11) gAdPz ¥gªiÁtÄU¼£Ä ¹°PÁ£ï ºg½U ¨gP ªiÁrzÁU DUÀª CgªÁºPz «z ---- 1 x 3 = 3
The type of semiconductor obtained when silicon is doped with phosphorous is_____

12) ¸ÆÃ£Ágï¤Az ºÁgl ±æuÁwÃv vgAU ¸ªÄÄzæ v¼ª£Ä v®Ä¦, ¥æ¥®£UÆAqÄ UÁæªª£Ä 3 ¸PAqÄU¼° ¸Ãjzg, ¸ªÄÄzæD¼ ------
Ultrasonic waves are emitted from the SONAR. These waves are reflected by the ocean bottom and reach the detector in 3sec,The depth of the ocean is _____

13) ¸Ëg M¯AiÄ M¼U ºZÄ ±ÁR ¸AUæªÁUÀªAv ªiÁqÀª ¨ÁU _____
The part which helps to store large amount of heat energy inside the solar cooker is_____

14) ºÁEA¢¹ §g 1 x 4 = 4

A	B
1. C_6H_6	£É¸VðP C¤®z ªÄÄRÉ WlP/Main component of natural gas
2. C_6H_{12}	D¯ÖÉ£ï/Alkyne
3. C_6H_{10}	¸ÄªÁ¸£AiÀÄP ºÉqÁæPÁ§ð£ï/Aromatic hydrocarbon
4. CH_4	L¸ÆÃ ºPÃ£ï/Iso hexane
	PÁ¨ÆÃð¸ÉQPï ºÉqÁæPÁ§ð£ï/Carbocyclic hydrocarbon
	zæ¥mÁæAiÀªï C¤®z ªÄÄRÉ WlP/Main component of L.P.G
	C¹l°£ï/Acetylene

F P¼V£ ¥æÃU½U MAzÄ ¥z Cxª Á MAzÄ ªÁPÀz° Gvg §g¬Äj
Answer the following in One sentence

15) ¸Anæ¢eï JAzgÃ£Ä ? 1 x 6 = 6
What is centrifuge?

16) ¸ÉP¯ï ¸ªÁg£Ä wgÄªÀ ¥xz° Z°¸ÄªÁU PÃAzæ PqU KP ¨ÁUÄvÁ£ ?
Why does a cyclist lean towards the centre of the curve while moving in a curved path?

17) ¸Ëg ªÁvÁªgtz JgqÄ ¨ÁUU¼Ä AiiÁªÀªÀ ?
Which are the two regions of solar atmosphere?

18) 20 ವೋಲ್ಟ್ ವಿದ್ಯುತ್ ಪಡೆಯಲು ಸೌರಪಟ್ಟಿಯಲ್ಲಿ2ಚದರ ಸೆಂ.ಮೀನ ಎಷ್ಟು ಸಿಲಿಕಾನ್ ಸೌರಕೋಶಗಳನ್ನು ಜೋಡಿಸ ಬೇಕು ?
How many silicon solar cells of 2 sq.cm. area are to be connected in a solar panel to produce 20v?

19) M§ ªÀQ ªÆmÁgï¨ÉPï£ §¼PAiÄ£Ä¤°¹ ¸ÉP®£Ä §¼¸ÄvÁ£ .F PæÄª£Ä EvggÄ C£Ä¸j¹zÁU AiiÁª «zz ±QAiÄ ªÄÆ®z ªÄÃ°£ Mvq PrªÄAiiÁUÄvz ?
A person starts to use bicycle instead of a motor cycle.If others also follow this method then pressure on which source of energy can be minimized ?

20) ¨ÁAiÄgïU¼° ¸vvªÁV Uq¸Ä ¤Ãg£Ä §¼¸ÄªÀzjAz ¸A¨«¸§ºÄzÁz C¥ÁAiÄ AiiÁªÀzÄ?
What are the possible harms occurring with the continuous use of hard water in boilers?

21) 1) ¸ÄgÄ½U ºÆA¢PÆAq PÁAv, ¸ÄgÄ½ ¸ÄvÄª ªÃUz° ºÁUÆ CzÃ ¢Q£° ¸ÄvÄwgÄªÁU ¥ÃæÀv «zÄvï ZÁ®P §¯ GAmÁU¢gÄªÀzP PÁgt PÆqÄ. 2 x 9 = 18
2) ¥ÃæÀv «zÄvÁ®P §®z ªÄÃ¯ ¥æÁª ©ÃgÄª CA±U¼Ä AiiÁªÀªÀ ?
1) A magnet and a coil are moving in the same direction and with same speed e.m.f is not induced in the coil ? Give reason.
2) What are the factors influencing induced e.m.f?

22) r.¹ q£ªÆÃz avæ®r¹. ¨ÁUU¼£Ä º¸j¹
Draw a neat labeled diagram of DC Motor.

23) ªÉzÀQÃAiÄ PÃvæ° £Ãg¼ÁwÃv «Qgtz JgqÄ G¥AiÆÃU¼£Ä §g¬Äj.
Write any two uses of Ultraviolet ray in the field of medical.

24) mÁæ¸gï£ JgqÄ «zU¼ ªÄAq® ¸APÃvU¼ avæ®r¹j
Give the circuit symbols of two types of transistor.

25) ¥mÆÃæ¯ï JAf£ï£ ¨ÄQ ºÆqvz avæ®r¹j
Draw a sketch of intake stroke of a petrol engine

26) ಕಾರಣ ಕೊಡಿ. 1) ಉಷ್ಣೋತ್ಪತ್ತಿ ತಂತಿಗಳ ತಯಾರಿಕೆಗೆ ನೈಕ್ರೋಮ್‌ನ್ನು ಬಳಸುತ್ತಾರೆ. 2) ಆಭರಣ ತಯಾರಿಸುವಾಗ ಚಿನ್ನಕ್ಕೆ ತಾಮ್ರ
¸Ãj¸ÄvÁg.
Give reason for each of the following (1)Nichrome is used to make heating coils (2) Copper is mixed with gold while making ornaments

27) ¸nP ¹°PÁ£ï££Ä ºÃU ¥qAiÄ¯ÁUÄvz ?¸«ÄÃPgtzÆA¢U «ªj¸Ä
How is crystalline silicon obtained? Explain with the equation

28) UÁf£ C¤®£ JAzgÃ£Ä ? EzjAz DUªÄ C£ÄPÆ®v K£Ä ?
What is annealing? What is its use?

29) ¤Ãj£ ¸AgPuAiÄ £Á®Ä PÀæUÀ¼£Ä §g.
Write four methods of conserving water.

30) 1) «±ªÁ¦ UÄgÄv ¤AiÄªÄªÄ£Ä ¤gÆ¦¹. 3 x 4 = 12
2) UÄgÄv ¤AiÄªÄ¢Az ¸ªÄ¥ðPªÁV «ªj¸®l £Á®Ä CA±U¼Ä AiiÁªÄª?
1) State the universal law of gravitation.
2) Mention four points successfully explained by it.

31) 1) gÆÃ»v z±ðPz° §tU¼ C¢ªÁ¥£AiÄ£Ä ºÃU PrªÄ AiiÁUÄvz ?
2) ¨¼Q£ ªtð«¨d£U PÁgtªÃ£Ä ?
3) ಮೇಣದ ಬತ್ತಿಯ ಜ್ವಾಲೆ ಮತ್ತು ಅನಿಲ ಬಾಷ್ಪ ದೀಪಗಳಿಂದ ದೊರೆಯುವ ರೋಹಿತದ ವಿಧಗಳು ಯಾವುವು ?
1) How can overlapping of colours in spectroscope be minimized?
2) What is the reason for dispersion ?
3) Mention the type of spectrum obtained by candle flame and light emitted from gases or vapours.

32) F P¼V£ ¸Az¨ðU¼° G¥AiÆÃV¸®qÄª L¸ÆÃmÆÃ¥ïU¼£Ä º¸j¹
1) ¥½AiÄÄ½P ±Á¸¦d¤U zÆgv q¦£ÆÃ¸Ág¸ï£ ¥¼AiÄÄ½PAiÄ ªAiÄ¸£Ä w½AiÄ®Ä
2) ಔಷದಿ ತಯಾರಿಕನಿಗೆ ಔಷಧಿಯ ಪರಿಣಾಮವನ್ನು ತಿಳಿಯಲು
3) P¦¶ «eÁ¤U gÁV ¨¼U AiiÁª jÃwAiÄ ¥Á¸Ãmï£ CUv¦«zAiÄAzÄ PAqÄPÆ¼®Ä
Write the name of the isotopes used in the following cases
1) To find the age of fossil of Dynosaraus
2) To study the action of medicines
3) To determine the kind of phosphate required for Ragi crop.

33) 1) ¸g¥½ «z¼£ QæÄAiÄ avæ®r¹,£ÆmÁæ ªÄvÄ «z¼£ ªÄÄgÄPÄU¼£Ä UÄgÄw¹.
2) ಒಂದು ಬೀಜ ವಿದಳನದಿಂದ 2 ನ್ಯೂಟ್ರಾನುಗಳು ಬಿಡುಗಡೆಯಾದರೆ 3ನೇ ಹಂತದ ವಿದಳನದಲ್ಲಿ ಎಷ್ಟು ನ್ಯೂಟ್ರಾನುಗಳು ©qÄUqAiiÁUÄvª?
Sketch the diagram of nuclear fission reaction and label neutron and fission fragments
a) Calculate the number of neutrons liberated in the third stage of nuclear fission reaction liberating two neutrons when a nucleus gets fissioned

34) 1) ¨Æ¹ìg G¥Uæ¹ìgªÁV UÆÃZj¸®Ä PÁgtªÃ£Ä ? 4 x 3 = 12
2) ¨Æ¹ìg G¥UæU¼ ¸A¥PðeÁ®U½Az dUvÄ QjzÁVz .¸ªÄxð£ ¤Ãr.
3) PPÁ ªÃU ªÄvÄ «ªÆÃZ£ ªÃUU¼ £qÄ«£ ¸A§Az §g¬Äj.
1) Why does geostationary satellite appear to be stationary?
2) "Communication network of geostationary satellite made this world tiny". Justify this statement.
3) Write the relation between Orbital and escape Velocity

35) vÁªÄæ±Ä¢ÃPgtPì G¥AiÆÃV¸Äª «zÄÄvï «¨d£ PÆÃ±z avæ®r¹, ¨ÁUU¼£Ä ºÁ¸j¹.
Draw the sketch of electrolytic cell for purification of copper and label the parts

36) 1) ಎರಡನೇ ಕಾಂತಿಮಾನ ನಕ್ಷತ್ರವು ನಾಲ್ಕನೇ ಕಾಂತಿಮಾನ ನಕ್ಷತ್ರಕ್ಕಿಂತ ಎಷ್ಟು ಪಟ್ಟು ಹೆಚ್ಚು ಪ್ರಕಾಶಮಾನವಾಗಿದೆ ?
2) £PvÄæ¼ «©£ì UÆÃZg ¥Áæ±Pì PÁgtªÃ£Ä ?
3) £ÁPwæ«PÁ¸z° PPÆ£ï ºAv ªÄvÄ ¹ìg¹ìw ºAv ºÃU GAmÁUÄvz.
1) How many times a star of magnitude 2 is brighter than a star of magnitude 4
2) Why do the stars differ in their apparent brightness?
3) Explain how the cocoon and steady stage of a star occur.

fÃªÀÄ¸ÀÀ

For Each multiple choice question four alternatives are given. Out of these alternatives choose the correct answer and write the answer in the space provided 1 x 5 = 5

1) F P¼V£ ¸¸ì¼° ©ÃeÁtÄd£P ªÄvÄ °AUÁtÄ d£PU¼gqÄ ¸vAvæÁVgÄª ¸¸ì
1) Dªìv©Ãd ¸¸ì¼Ä 2) ¥ìZì¸¸ì¼Ä 3) C£ÁªìV ©Ãd¸¸ì¼Ä 4) §æiÆÃ¥ìmïU¼Ä
Which among the following plants have independent Sporophyte and gametophyte.
A) Angiosperms B) Pterydophytes C) Gymnosperms D) Bryophytes

2) jª¸ïð mÁæQæ£ï JA§ QæiÄAiÄÄ EzÁVgÄvz
1) r.J£ï.J ¬ÄAz Dgï.J£ï.J vAiiÁj 2) Dgï.J£ï.J ¬ÄAz ¥ÇæÃ£ï£ vAiiÁj
3) Dgï.J£ï.J ¬ÄAz r.J£ï.J AiÄ vAiiÁj 4) r.J£ï.J CtÄU¼ ¢¥æÁPgt
This is the reverse transcription process
A) Synthesis of RNA by DNA B) Synthesis of protein by RNA
C) Synthesis of DNA by RNA D) replication of DNA molecules

3) ªiÁ£ª£ ªÄzÄ¼Ä§½¬ÄAz K¥ðqÄª ¥gÁªwðvZÁ¥z ªÁì¦U §gÄª WlPU¼° Eªì PÆq ¸Ãjª
1) eÁ£ªÁ» £gU¼Ä 2) QæiÁªÁ» £gU¼Ä
3) eÁ£ªÁ» £gªÄÆ® ªiÁvæ 4) eÁ£ªÁ» ªÄvÄ QæiÁªÁ» £gªÄÆ®U½Az ¸AAiÆÃfvªÁz «Ä±ÆgU¼Ä
Reflex arc produced by spinal chord of man also includes these components
A) sensory nerves B) motor nerves
C) only the sensory roots D) mixed nerves produced by the combination of sensory and motor roots

4) ¥ìÁ£gï¸AAiÆÃfv r.J£ï.J vAvæÁ£ªì Ezg E£ÆìAzÄ º¸gÁVz
1) v½vAvæÁ£ 2) eì«P vAvæÁ£ 3) CAUÁA± Pì¶ 4) ¨g¼ZÄ vAvæÁ£

Another name for recombinant "DNA Technology" is
A) Genetic engineering B) Biotechnology C) Tissue culture D) DNAfingerprint technology

5) ¸ªð eÁ£ÃA¢æÃiÄU¼ eÁ£ªÁºP £gU¼ D¢ ªÄvÄ CAvÀU¼Ä »ÃVgÄvª
1) ಆದಿ – ಮೆದುಳಿನ ನಿರ್ದಿಷ್ಟ ಜ್ಞಾನಕ್ಷೇತ್ರ; ಅಂತ್ಯ – ನಿರ್ದಿಷ್ಟ ಜ್ಞಾನೇಂದ್ರಿಯ
2) ಆದಿ – ನಿರ್ಧಿಷ್ಟ ಜ್ಞಾನೇಂದ್ರಿಯ; ಅಂತ್ಯ – ಮೆದುಳಿನ ನಿರ್ದಿಷ್ಟ ಜ್ಞಾನಕ್ಷೇತ್ರ
3) ಆದಿ – ಮೆದುಳಿನ ನಿರ್ದಿಷ್ಟ ಜ್ಞಾನಕ್ಷೇತ್ರ; ಅಂತ್ಯ – ತತ್ಸಂಬಂಧಿ ನಿರ್ದಿಷ್ಟ ಜ್ಞಾನೇಂದ್ರಿಯ
4) ಆದಿ – ಮಣಿಶಿರ; ಅಂತ್ಯ – ನಿರ್ದಿಷ್ಟ ಜ್ಞಾನೇಂದ್ರಿಯ
Origin and end of sensory nerves of all sensory organs are as follows.
A) origin - specific sensory area of brain; end - specific sense organs
B) origin - specific sense organs; end - specific sensory area of brain
C) origin - specific sensory area of brain; end - specific related sense organ
D) origin - Medulla oblongata; end - specific sense organs

6) ºÆA¢¹ §g 1 x 4 = 4

	A	B
1.	KjAiÆÃ¯Ágï CAUÁA±/Aerolar tissue	C£ÀaP ¸ÁªÀiÁÄÄU¼Ä/ involuntary muscles
2.	¥m ¸»v ¸ÁªÀiÁÄÄU¼Ä/striped muscles	¨PP fÃªPÆÃ±U¼£Ä ºÆA¢z/intercellular space
3.	¥Ãmï¯mï/platelets	LaP ¸ÁªÀiÁÄÄU¼Ä/voluntary muscles
4.	DPÁ£ï/Axon	gP º¥ÀUlÄ«PU ¸ºÁAiÄP/clotting of blood
		¨ÆdÄ CAUÁA±/Adipose tissue
		ªÄAiÄ°£ï ºÆ¢z/Myelin sheath
		qAqæÃmï/Dendrite

7) AiiÁªÀzÁzgÆ JgqÄ xÁ®¸ïAiÄÄP ¸¸ÀU¼£Ä ºÁ¸j¹ 1 x 4 = 4
Name any two plants which are having thallus.

8) zÄwgÁ¸ÁAiÄ¤P ¸ÁUï ªÄvÄ DªÄªÄ¼U¼Ä KP ªÄ£ÄPÄ®PÀ ±Á¥ J¤¹ª ?
"Photochemical smog and acid rain are curse to man kind" why?

9) ¨g¼ZÄ vAvæÁ£z AiiÁªÀzÁzgÆ MAzÄ C£AiÄª£Ä §g.
Write any one of the application of DNA finger print technology.

10) vÄ¥zÆA¢U ¸ÁªiÁ£ÀªÁV «Ä±æiÁqÄª P®¨gP ¥zÁxðªÀ AiiÁªÀzÁVz ?
Which substance is mixed as a adultrant in ghee?

11) xÀgÁQ£ï ªÄvÄ CrÃæ¯ïºÁªÆÃð£ïU¼ MAzÆAzÄ PÁAiÄðª£Ä §g¬Äj 2 x 6 = 12
Write one function of hormone Thyroxin and Adrenaline

12) ªiÁ£ª£ Pt£°gÄª º¼¢ ¥æÃ± ªÄvÄ CAz¥æÃ±U½VgÄª JgqÄ ¥æÄR ªÀvÁ¸U¼£Ä §g
Write any two differences between yellow spot and blind spot of human eye.

13) ªiÁ£ª£ DgÆÃUÀz ªÄÃ¯ ¥æPÆ® ¥juÁªÄU¼£Ä GAlÄªiÁqÄª ««z ªiÁ°£ÀU¼£Ä ºÁ¸j¸Ä.
Name the different types of pollutions that effect human health.

14) JZï.L.« ªÄvÄ ºZï.©.«U½VgÄª AiiÁªÁzÁzgÆ JgqÄ ¥æÄÄR ªÁvÁ¸U¼£Ä¥nªiÁr
List out any two main differences between HIV and HBV

15) F P¼V£ªÁU¼£Ä¸g¼ ±Á±v CAUÁA±U¼Ä ªÄvÄ ¸AQÃtð ±Á±v CAUÁA±U¼£ÁV ªVðPj¹j. ¥ÁgAPÉªiÁ, PöÉ®A, ¥ÇÃAiÄªiï, PÆÃ¯APÉªiÁ
Classify the following into Simple permanent tissues and Complex permanent tissues.(a)Parenchyma (b)Xylem (c)Phloem (d)Collenchyma

16) F P¼V£ªÁU¼£Ä ªÄÆgÄ ªÄvÄ £Á®Ä PÆÃuU¼Ä¼ ºÉzAiÄª£Ä ºÆA¢z ¥ÁæU¼£ÁV ªVÃðPj¹j
1) P¥ 2) ¥Ájª Á¼ 3) ¸¥ð 4) ªiÁ£ª
Classify the following vertebrates into three chambered and four chambered heart bearing animals
(a) Frog (b) Pigeon (c) Cobra (d) Man

17) fÃª¨ÆgÁ¸ÁAiÄ¤P ZPæ¼£Ä ¥j¥Çtð ªÄvÄ C¥j¥Çtð ZPæ¼ÁV ªVÃðPj¸Äª° ¸AUæ ªÄÆ®, «¤ªÄAiÄ ªÄÆ® ¹jÃPgt ªÄvÄ ªÄgÄZQægtU¼Ä ºÃU DzÁgP CA±U¼ÁVª ? 3 x 2 = 6
How are Reservoir pool, Exchange pool, fixation and recycling Considered as the basic factors in the classification of biogeochemical Cycles into perfect and imperfect cycle?

18) «ÄÃ¤£ ¨Áº¸ gZ£AiÄ£Ä vÆÃj¸Äª avæ£Ä §gzÄ ¨ÁUU¼£Ä ºÁj¹j
Draw a neat diagram of external features of a fish and label the parts.

19) ªÄzÄ¼Ä§½AiÄ CqbÃz £ÆÃlz avæ§gzÄ ¨ÁUU¼£Ä ºÁj¸Ä 4 x 1 = 4
Draw a neat diagram of cross section of spinal chord and label the parts.

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