हिंदी मातृभाषा (कोड 002)
कक्षा 9वीं–10वीं (2018-19)

नवीं कक्षा में दाखिल होने वाले विद्यार्थी की भाषा शैली और विचार बोध का ऐसा आधार बन चुका होता है कि उसे उसके दायरे के विस्तार और वैचारिक समृद्धि के लिए जरूरी संसाधन मुहैया कराए जाएँ। माध्यमिक स्तर तक आते-आते विद्यार्थी किशोर हो चुका होता है और उसमें सुनने, बोलने, पढ़ने, लिखने के साथ-साथ आलोचनात्मक दृष्टि विकसित होने लगती है। भाषा के सौंदर्यात्मक पक्ष, कथात्मकता/गीतात्मकता, अखबारी समझ, शब्द की दूसरी शक्तियों के बीच अंतर, राजनैतिक एवं सामाजिक चेतना का विकास, स्वयं की अस्मिता का संदर्भ और आवश्यकता के अनुसार उपयुक्त भाषा-प्रयोग, शब्दों के सुचिंतित इस्तेमाल, भाषा की नियमबद्ध प्रकृति आदि से विद्यार्थी परिचित हो जाता है। इतना ही नहीं वह विभिन्न विधाओं और अभिव्यक्ति की अनेक शैलियों से भी वाकिफ होता है। अब विद्यार्थी की पढ़ाई आस-पड़ोस, राज्य-देश की सीमा को लांघते हुए वैश्विक क्षितिज तक फैल जाती है। इन बच्चों की दुनिया में समाचार, खेल, फिल्म तथा अन्य कलाओं के साथ-साथ पत्र-पत्रिकाएँ और अलग-अलग तरह की किताबें भी प्रवेश पा चुकी होती हैं।

इस स्तर पर मातृभाषा हिंदी का अध्ययन साहित्यिक, सांस्कृतिक और व्यावहारिक भाषा के रूप में कुछ इस तरह से हो कि उच्चतर माध्यमिक स्तर पर पहुँचते-पहुँचते यह विद्यार्थियों की पहचान, आत्मविश्वास और विमर्श की भाषा बन सके। प्रयास यह भी होगा कि विद्यार्थी भाषा के लिखित प्रयोग के साथ-साथ सहज और स्वाभाविक मौखिक अभिव्यक्ति में भी सक्षम हो सके।

इस पाठ्यक्रम के अध्ययन से -

(क) विद्यार्थी अगले स्तरों पर अपनी रूचि और आवश्यकता के अनुरूप हिंदी की पढ़ाई कर सकेंगे तथा हिंदी में बोलने और लिखने में सक्षम हो सकेंगे।

(ख) अपनी भाषा दक्षता के चलते उच्चतर माध्यमिक स्तर पर विज्ञान, समाज विज्ञान और अन्य पाठ्यक्रमों के साथ सहज संबद्धता (अंतर्संबंध) स्थापित कर सकेंगे।

(ग) दैनिक व्यवहार, आवेदन पत्र लिखने, अलग-अलग किस्म के पत्र लिखने और प्राथमिकी दर्ज कराने इत्यादि में सक्षम हो सकेंगे।

(घ) उच्चतर माध्यमिक स्तर पर पहुँचकर विभिन्न प्रयुक्तियों की भाषा के द्वारा उनमें वर्तमान अंतर्संबंध को समझ सकेंगे।

(ड.) हिंदी भाषा में दक्षता का इस्तेमाल वे अन्य भाषा-संरचनाओं की समझ विकसित करने के लिए कर सकेंगे।

कक्षा 9वीं व 10वीं में मातृभाषा के रूप में हिंदी-शिक्षण के उद्देश्य :

- कक्षा आठवीं तक अर्जित भाषिक कौशलों (सुनना, बोलना, पढ़ना और लिखना) का उत्तरोत्तर विकास।
- सृजनात्मक साहित्य के आलोचनात्मक आस्वाद की क्षमता का विकास।
- स्वतंत्र और मौखिक रूप से अपने विचारों की अभिव्यक्ति का विकास।
- ज्ञान के विभिन्न अनुशासनों के विमर्श की भाषा के रूप में हिंदी की विशिष्ट प्रकृति एवं क्षमता का बोध कराना।

- साहित्य की प्रभावकारी क्षमता का उपयोग करते हुए सभी प्रकार की विविधताओं (राष्ट्रीयता, धर्म, लिंग एवं भाषा) के प्रति सकारात्मक और संवेदनशील रवैये का विकास।
- जाति, धर्म, लिंग, राष्ट्रीयता, क्षेत्र आदि से संबंधित पूर्वाग्रहों के चलते बनी रूढ़ियों की भाषिक अभिव्यक्तियों के प्रति सजगता।
- विदेशी भाषाओँ समेत अन्य भारतीय भाषाओं की संस्कृति की विविधता से परिचय।
- व्यावहारिक और दैनिक जीवन में विविध किस्म की अभिव्यक्तियों की मौखिक व लिखित क्षमता का विकास।
- संचार माध्यमों (प्रिंट और इलेक्ट्रॉनिक) में प्रयुक्त हिंदी की प्रकृति से अवगत कराना और नए-नए तरीके से प्रयोग करने की क्षमता से परिचय।
- सघन विश्लेषण, स्वतंत्र अभिव्यक्ति और तर्क क्षमता का विकास।
- अमूर्तन की पूर्व अर्जित क्षमताओं का उत्तरोत्तर विकास।
- भाषा में मौजूद हिंसा की संरचनाओं की समझ का विकास।
- मतभेद, विरोध और टकराव की परिस्थितियों में भी भाषा को संवेदनशील और तर्कपूर्ण इस्तेमाल से शांतिपूर्ण संवाद की क्षमता का विकास।
- भाषा की समावेशी और बहुभाषिक प्रकृति के प्रति ऐतिहासिक नजरिए का विकास।
- शारीरिक और अन्य सभी प्रकार की चुनौतियों का सामना कर रहे बच्चों में भाषिक क्षमताओं के विकास की उनकी अपनी विशिष्ट गति और प्रतिभा की पहचान।

शिक्षण युक्तियाँ

माध्यमिक कक्षाओं में अध्यापक की भूमिका उचित वातावरण के निर्माण में सहायक की होनी चाहिए। भाषा और साहित्य की पढ़ाई में इस बात पर ध्यान देने की जरूरत होगी कि -

- विद्यार्थी द्वारा की जा रही गलतियों को भाषा के विकास के अनिवार्य चरण के रूप में स्वीकार किया जाना चाहिए जिससे विद्यार्थी अबाध रूप से बिना झिझक के लिखित और मौखिक अभिव्यक्ति करने में उत्साह का अनुभव करें। विद्यार्थियों पर शुद्धि का ऐसा दबाव नहीं होना चाहिए कि वे तनावग्रस्त माहौल में पड़ जाएँ। उन्हें भाषा के सहज, कारगर और रचनात्मक रूपों से इस तरह परिचित कराना उचित है कि वे स्वयं सहजरूप से भाषा का सृजन कर सकें।
- गलत से सही दिशा की ओर पहुँचने का प्रयास हो। विद्यार्थी स्वतंत्र और अबाध रूप से लिखित और मौखिक अभिव्यक्ति करे। अगर कहीं भूल होती है तो अध्यापक को अपनी अध्यापन शैली में परिवर्तन की आवश्यकता होगी।
- ऐसे शिक्षण-बिंदुओं की पहचान की जाए जिससे कक्षा में विद्यार्थी निरंतर सक्रिय भागीदारी करें और अध्यापक भी इस प्रकिया में उनका साथी बने।
- हर भाषा का अपना एक नियम और व्याकरण होता है। भाषा की इस प्रकृति की पहचान कराने में परिवेशगत और पाठगत संदर्भों का ही प्रयोग करना चाहिए। यह पूरी प्रक्रिया ऐसी होनी चाहिए कि विद्यार्थी स्वयं को शोधकर्ता समझे तथा अध्यापक इसमें केवल निर्देशन करें।
- हिंदी में क्षेत्रिय प्रयोगों, अन्य भाषाओं के प्रयोगों के उदाहरण से यह बात स्पष्ट की जा सकती है कि भाषा अलगाव में नहीं बनती और उसका परिवेश अनिवार्य रूप से बहुभाषिक होता है।
- भिन्न क्षमता वाले विद्यार्थियों के लिए उपयुक्त शिक्षण-सामग्री का इस्तेमाल किया जाए तथा किसी भी प्रकार से उन्हें अन्य विद्यार्थियों से कमतर या अलग न समझा जाए।

- कक्षा में अध्यापक को हर प्रकार की विभिन्नताओं (लिंग, जाति, वर्ग, धर्म आदि) के प्रति सकारात्मक और संवेदनशील वातावरण निर्मित करना चाहिए।
- परंपरा से चले आ रहे मुहावरों, कहावतों (जैसे रानी रूठेंगी तो अपना सुहाग लेंगी) आदि के जरिए विभिन्न प्रकार के पूर्वाग्रहों की समझ पैदा करना चाहिए और उनके प्रयोग के प्रति आलोचनात्मक दृष्टि विकसित करना चाहिए।
- मध्यकालीन काव्य की भाषा के मर्म से विद्यार्थी का परिचय कराने के लिए जरूरी होगा कि किताबों में आए काव्यांशों की संगीतबद्ध प्रस्तुतियों के ऑडियो-वीडियो कैसेट तैयार किए जाएँ। अगर आसानी से कोई गायक/गायिका मिले तो कक्षा में मध्यकालीन साहित्य के अध्यापन-शिक्षण में उससे मदद ली जानी चाहिए।
- वृत्तचित्रों और फीचर फिल्मों को शिक्षण-सामग्री के तौर पर इस्तेमाल करने की जरूरत है। इनके प्रदर्शन के क्रम में इन पर लगातार बातचीत के जरिए सिनेमा के माध्यम से भाषा के प्रयोग कि विशिष्टता की पहचान कराई जा सकती है और हिंदी की अलग-अलग छटा दिखाई जा सकती है।
- कक्षा में सिर्फ एक पाठ्यपुस्तक की भौतिक उपस्थिति से बेहतर होगा कि शिक्षक के हाथ में तरह-तरह की पाठ्यसामग्री को विद्यार्थी देखें और कक्षा में अलग-अलग मौकों पर शिक्षक उनका इस्तेमाल करें।
- भाषा लगातार ग्रहण करने की क्रिया में बनती है, इसे प्रदर्शित करने का एक तरीका यह भी है कि शिक्षक खुद यह सिखा सकें कि वे भी शब्दकोश, साहित्यकोश, संदर्भग्रंथ की लगातार मदद ले रहे हैं। इससे विद्यार्थियों में इनके इस्तेमाल करने को लेकर तत्परता बढ़ेगी। अनुमान के आधार पर निकटतम अर्थ तक पहुँचकर संतुष्ट होने की जगह वे अधिकतम अर्थ की खोज करने का अर्थ समझ जाएँगे। इससे शब्दों की अलग-अलग रंगत का पता चलेगा, वे शब्दों के बारीक अंतर के प्रति और सजग हो पाएँगे।

व्याकरण बिंदु

कक्षा 9वीं

- उपसर्ग, प्रत्यय
- समास
- अर्थ की दृष्टि से वाक्य भेद
- अलंकार : शब्दालंकार - अनुप्रास, यमक एवं श्लेष; अर्थालंकार - उपमा, रूपक, उत्प्रेक्षा, अतिशयोक्ति एवं मानवीकरण ।

कक्षा 10वीं

- रचना के आधार पर वाक्य भेद
- वाच्य
- पद-परिचय
- रस

श्रवण व वाचन (मौखिक बोलना) संबंधी योग्यताएँ

श्रवण (सुनना) कौशल

- वर्णित या पठित सामग्री, वार्ता, भाषण, परिचर्चा, वार्तालाप, वाद-विवाद, कविता-पाठ आदि का सुनकर अर्थ ग्रहण करना, मूल्यांकन करना और अभिव्यक्ति के ढंग को जानना।
- वक्तव्य के भाव, विनोद व उसमें निहित संदेश, व्यंग्य आदि को समझना।
- वैचारिक मतभेद होने पर भी वक्ता की बात को ध्यानपूर्वक, धैर्यपूर्वक व शिष्टाचारानुकूल प्रकार से सुनना व वक्ता के दृष्टिकोण को समझना।
- ज्ञानार्जन मनोरंजन व प्रेरणा ग्रहण करने हेतु सुनना।
- वक्तव्य का आलोचनात्मक विश्लेषण करना एवं सुनकर उसका सार ग्रहण करना।

श्रवण (सुनना) का परीक्षण : कुल 2.5 अंक (ढाई अंक)

- परीक्षक किसी प्रासंगिक विषय पर एक अनुच्छेद का स्पष्ट वाचन करेगा। अनुच्छेद तथ्यात्मक या सुझावात्मक हो सकता है। अनुच्छेद लगभग 150 शब्दों का होना चाहिए।
  या
  परीक्षक 2-3 मिनट का श्रव्य अंश (ऑडियो क्लिप) सुनवाएगा। अंश रोचक होना चाहिए। कथ्य /घटना पूर्ण एवं स्पष्ट होनी चाहिए। वाचक का उच्चारण शुद्ध, स्पष्ट एवं विराम चिह्नों के उचित प्रयोग सहित होना चाहिए।
- परीक्षक को सुनते-सुनते परीक्षार्थी अलग कागज पर दिए हुए श्रवण बोधन के अभ्यासों को हल कर सकेंगे।
- अभ्यास रिक्त स्थान पूर्ति, बहुविकल्पी अथवा सत्य/असत्य का चुनाव आदि विधाओं में हो सकते हैं।
- अति लघूत्तरात्मक 5 प्रश्न पूछे जाएँगे।

वाचन (बोलना) कौशल

- बोलते समय भली प्रकार उच्चारण करना, गति, लय, आरोह-अवरोह उचित बलाघात व अनुतान सहित बोलना, सस्वर कविता-वाचन, कथा-कहानी अथवा घटना सुनाना।
- आत्मविश्वास, सहजता व धाराप्रवाह बोलना, कार्यक्रम-प्रस्तुति।
- भावों का सम्मिश्रण जैसे - हर्ष, विषाद, विस्मय, आदर आदि को प्रभावशाली रूप से व्यक्त करना, भावानुकूल संवाद-वाचन।
- औपचारिक व अनौपचारिक भाषा में भेद कर सकने में कुशल होना व प्रतिक्रियाओं को नियंत्रित व शिष्ट भाषा में प्रकट करना।
- मौखिक अभिव्यक्ति को क्रमबद्ध, प्रकरण की एकता सहित व यथासंभव संक्षिप्त रखना।
- स्वागत करना, परिचय देना, धन्यवाद देना, भाषण, वाद-विवाद, कृतज्ञता ज्ञापन, संवेदना व बधाई इत्यादि मौखिक कौशलों का उपयोग।
- मंच भय से मुक्त होकर प्रभावशाली ढंग से 5-10 मिनट तक भाषण देना।

वाचन (बोलना) का परीक्षण : कुल 2.5 अंक (ढाई अंक)

- चित्रों के क्रम पर आधारित वर्णनः इस भाग में अपेक्षा की जाएगी कि परीक्षार्थी विवरणात्मक भाषा का प्रयोग करें।

- किसी चित्र का वर्णन (चित्र व्यक्ति या स्थान के हो सकते हैं)
- किसी निर्धारित विषय पर बोलना जिससे वह अपने व्यक्तिगत अनुभव का प्रत्यास्मरण कर सके।
- परिचय देना। 1 अंक
  (स्व/ परिवार/ वातावरण/ वस्तु/ व्यक्ति/ पर्यावरण/ कवि /लेखक आदि)
- आधे-आधे अंक के कुल तीन प्रश्न पूछे जा सकते हैं। 1.5 (डेढ़ अंक)

कौशलों के अंतरण का मूल्यांकन

	श्रवण (सुनना)		**वाचन(बोलना)**
1	विद्यार्थी में परिचित संदर्भों में प्रयुक्त शब्दों और पदों को समझने की सामान्य योग्यता है, किंतु सुसंबद्ध आशय को नहीं समझ पाता।	1	विद्यार्थी केवल अलग-अलग शब्दों और पदों के प्रयोग की योग्यता प्रदर्शित करता है किंतु एक सुसंबद्ध स्तर पर नहीं बोल सकता।
2	छोटे सुसंबद्ध कथनों को परिचित संदर्भों में समझने की योग्यता है।	2	परिचित संदर्भों में केवल छोटे सुसंबद्ध कथनों का सीमित शुद्धता से प्रयोग करता है।
3	परिचित या अपरिचित दोनों संदर्भों में कथित सूचना को स्पष्ट समझने की योग्यता है। अशुद्धियाँ करता है जिससे प्रेषण में रूकावट आती है	3	अपेक्षित दीर्घ भाषण में अधिक जटिल कथनों के प्रयोग की योग्यता प्रदर्शित करता है अभी भी कुछ अशुद्धियाँ करता है। जिससे प्रेषण में रूकावट आती है।
4	दीर्घ कथनों की शृंखला को पर्याप्त शुद्धता से समझता है और निष्कर्ष निकाल सकता है।	4	अपरिचित स्थितियों में विचारों को तार्किक ढंग से संगठित कर धारा प्रवाह रूप में प्रस्तुत कर सकता है। ऐसी गलतियाँ करता है जिनसे प्रेषण में रूकावट नहीं आती।
5	जटिल कथनों के विचार-बिंदुओं को समझने की योग्यता प्रदर्शित करता है, उद्देश्य के अनुकूल सुनने की कुशलता प्रदर्शित करता है।	5	उद्देश्य और श्रोता के लिए उपयुक्त शैली को अपना सकता है केवल मामूली गलतियाँ करता है।

टिप्पणी

- परीक्षण से पूर्व परीक्षार्थी को तैयारी के लिए कुछ समय दिया जाए।
- विवरणात्मक भाषा में वर्तमान काल का प्रयोग अपेक्षित है।
- निर्धारित विषय परीक्षार्थी के अनुभव संसार के हों, जैसे - कोई चुटकुला या हास्य-प्रसंग सुनाना, हाल में पढ़ी पुस्तक या देखे गए सिनेमा की कहानी सुनाना।
- जब परीक्षार्थी बोलना प्रारंभ करें तो परीक्षक कम से कम हस्तक्षेप करें।

पठन कौशल

पठन क्षमता का मुख्य उद्देश्य ऐसे व्यक्तियों का निर्माण करने में निहित है जो स्वतंत्र रूप से चिंतन कर सकें तथा जिनमें न केवल अपने स्वयं के ज्ञान का निर्माण करने की क्षमता हो अपितु वे इसका आत्मावलोकन भी कर सकें।

- सरसरी दृष्टि से पढ़कर पाठ का केंद्रीय विचार ग्रहण करना।
- एकाग्रचित हो एक अभीष्ट गति के साथ मौन पठन करना।
- पठित सामग्री पर अपनी प्रतिक्रिया प्रकट करना।
- भाषा, विचार एवं शैली की सराहना करना।
- साहित्य के प्रति अभिरूचि का विकास करना।
- संदर्भ के अनुसार शब्दों के अर्थ-भेदों की पहचान करना।
- किसी विशिष्ट उद्देश्य को ध्यान में रखते हुए तत्संबंधी विशेष स्थल की पहचान करना।
- पठित सामग्री के विभिन्न अंशों का परस्पर संबंध समझना ।
- पठित अनुच्छेदों के शीर्षक एवं उपशीर्षक देना।
- कविता के प्रमुख उपादान - तुक, लय, यति आदि से परिचित कराना।

टिप्पणी : पठन के लिए सामाजिक, सांस्कृतिक , प्राकृतिक, कलात्मक, मनोवैज्ञानिक, वैज्ञानिक तथा खेल-कूद और मनोरंजन संबंधी साहित्य के सरल अंश चुने जाएँ।

लिखने की योग्यताएँ

- लिपि के मान्य रूप का ही व्यवहार करना।
- विराम-चिह्नों का सही प्रयोग करना।
- लेखन के लिए सक्रिय (व्यवहारोपयोगी) शब्द भंडार की वृद्धि करना।
- प्रभावपूर्ण भाषा तथा लेखन-शैली का स्वाभाविक रूप से प्रयोग करना।
- उपयुक्त अनुच्छेदों में बाँटकर लिखना।
- प्रार्थना पत्र, निमंत्रण पत्र, बधाई पत्र, संवेदना पत्र, आदेश पत्र, एस.एम.एस आदि लिखना और विविध प्रपत्रों को भरना।
- विविध स्रोतों से आवश्यक सामग्री एकत्र कर अभीष्ट विषय पर निबंध लिखना।
- देखी हुई घटनाओं का वर्णन करना और उन पर अपनी प्रतिक्रिया प्रकट करना।
- पढ़ी हुई कहानी को संवाद में तथा संवाद को कहानी में परिवर्तित करना।
- समारोह और गोष्ठियों की सूचना और प्रतिवेदन तैयार करना।
- सार, संक्षेपीकरण एवं भावार्थ लिखना।
- गद्य एवं पद्य अवतरणों की व्याख्या लिखना।
- स्वानुभूत विचारों और भावनाओं को स्पष्ट सहज और प्रभावशाली ढंग से अभिव्यक्त करना।
- क्रमबद्धता और प्रकरण की एकता बनाए रखना।
- लिखने में मौलिकता और सर्जनात्मकता लाना।

रचनात्मक अभिव्यक्ति

- वाद-विवाद
  विषय का चुनाव विषय-शिक्षक स्वयं करें।
  आधार बिंदु - तार्किकता, भाषण कला, अपनी बात अधिकारपूर्वक कहना।
- कवि सम्मेलन।
  पाठ्यपुस्तक में संकलित कविताओं के आधार पर कविता पाठ
  या
  मौलिक कविताओँ की रचना कर कवि सम्मेलन या अंत्याक्षरी

आधार बिंदु

- अभिव्यक्ति
- गति, लय, आरोह-अवरोह सहित कविता वाचन
- मंच पर बोलने का अभ्यास/या मंच भय से मुक्ति

कहानी सुनाना/ कहानी लिखना या घटना का वर्णन/लेखन

आधार बिंदु

- संवाद - भावानुकूल एवं पात्रानुकूल
- घटनाओं का क्रमिक विवरण
- प्रस्तुतीकरण
- उच्चारण

- परिचय देना और परिचय लेना - पाठ्य पुस्तक के पाठों से प्रेरणा लेते हुए आधुनिक तरीके से किसी नए मित्र से संवाद स्थापित करते हुए अपना परिचय सरल शब्दों में देना तथा उसके विषय में जानकारी प्राप्त करना।
- अभिनय कला-पाठों के आधार पर विद्यार्थी अपनी अभिनय प्रतिभा का प्रदर्शन कर भाषा में संवादों की अदायगी का प्रभावशाली प्रयोग कर सकते हैं। नाटक एक सामूहिक क्रिया है, अतः नाटक के लेखन, निर्देशन संवाद, अभिनय, भाषा व उद्देश्य इत्यादि को देखते हुए शिक्षक स्वयं अंकों का निर्धारण कर सकता है।
- आशुभाषण – विद्यार्थियों की अनुभव परिधि से संबंधित विषय।
- सामूहिक चर्चा - विद्यार्थियों की अनुभव परिधि से संबंधित विषय।

मूल्यांकन के संकेत बिंदुओं का विवरण

प्रस्तुतीकरण

- आत्मविश्वास
- हाव-भाव
- प्रभावशीलता
- तार्किकता
- स्पष्टता

विषय वस्तु

- विषय की सही अवधारणा
- तर्क सम्मत

भाषा

- शब्द चयन व स्पष्टता स्तर और अवसर के अनुकूल।

उच्चारण

- स्पष्ट उच्चारण, सही अनुतान, आरोह-अवरोह पर अधिक बल।

हिंदी पाठ्यक्रम - अ (कोड सं. - 002)

कक्षा 9वीं हिंदी अ - संकलित परीक्षाओं हेतु पाठ्यक्रम विनिर्देशन 2018-19

परीक्षा भार विभाजन					
	विषयवस्तु			उप भार	कुल भार
1	पठन कौशल गद्यांश व काव्यांश पर शीर्षक का चुनाव, विषय-वस्तु का बोध, भाषिक बिंदु /संरचना आदि पर अति लघूत्तरात्मक एवं लघूत्तरात्मक प्रश्न				15
	अ	एक अपठित गद्यांश (100 से 150 शब्दों के) (1x2=2) (2x3=6)		8	
	ब	एक अपठित काव्यांश (100 से 150 शब्दों के) (1x3=3) (2x2=4)		7	
2	व्याकरण के लिए निर्धारित विषयों पर विषय-वस्तु का बोध, भाषिक बिंदु /संरचना आदि पर प्रश्न (1x15)				15
	व्याकरण				
	1	शब्द निर्माण उपसर्ग - 2 अंक, प्रत्यय - 2 अंक, समास - 3 अंक		7	
	2	अर्थ की दृष्टि से वाक्य भेद - 4 अंक		4	
	3	अलंकार - 4 अंक (शब्दालंकार अनुप्रास, यमक, श्लेष) (अर्थालंकार उपमा, रूपक, उत्प्रेक्षा, अतिशयोक्ति, मानवीकरण)		4	
3	पाठ्यपुस्तक क्षितिज भाग - 1 व पूरक पाठ्यपुस्तक कृतिका भाग -1				30
	अ	गद्य खंड		13	
		1	क्षितिज से निर्धारित पाठों में से गद्यांश के आधार पर विषय-वस्तु का बोध, भाषिक बिंदु /संरचना आदि पर प्रश्न । (2+2+1)	5	
		2	क्षितिज से निर्धारित गद्य पाठों के आधार पर विद्यार्थियों की उच्च चिंतन व मनन क्षमताओं का आकलन करने हेतु प्रश्न ।(2x4)	8	
	ब		काव्य खंड	13	
		1	काव्यबोध व काव्य पर स्वयं की सोच की परख करने	5	

			हेतु क्षितिज से निर्धारित कविताओं में से काव्यांश के आधार पर प्रश्न (2+2+1)		
		2	क्षितिज से निर्धारित कविताओं के आधार पर विद्यार्थियों का काव्यबोध परखने हेतु प्रश्न । (2x4)	8	
	स	पूरक पाठ्यपुस्तक कृतिका भाग - 1		4	
		पूरक पुस्तिका कृतिका के निर्धारित पाठों पर आधारित एक प्रश्न पूछा जाएगा (विकल्प सहित)। इस प्रश्न का कुल भार चार अंक होगा। (4x1)		4	
4	लेखन				20
	अ	विभिन्न विषयों और संदर्भों पर विद्यार्थियों के तर्कसंगत विचार प्रकट करने की क्षमता को परखने के लिए संकेत बिंदुओं पर आधारित समसामयिक एवं व्यावहारिक जीवन से जुड़े हुए विषयों पर 200 से 250 शब्दों में किसी एक विषय पर निबंध। (10x1)		10	
	ब	अभिव्यक्ति की क्षमता पर केंद्रित औपचारिक अथवा अनौपचारिक विषयों में से किसी एक विषय पर पत्र। (5x1)		5	
	स	किसी एक विषय पर संवाद लेखन। (5x1)		5	
			कुल		80

नोट : निम्नलिखित पाठों से प्रश्न नहीं पूछे जाएंगे।

क्षितिज (भाग - 1)	• उपभोक्तावाद की संस्कृति • एक कुत्ता और एक मैना • साखियाँ व सबद पाठ से सबद - 2 संतो भाई आई.. • ग्राम श्री
कृतिका (भाग - 1)	• इस जल प्रलय में • किस तरह आखिरकार मैं हिंदी में आया

हिंदी पाठ्यक्रम - अ (कोड सं. 002)

कक्षा 10वीं हिंदी - अ परीक्षा हेतु पाठ्यक्रम विनिर्देशन 2018-19

परीक्षा भार विभाजन					
	विषयवस्तु			उप भार	कुल भार
1	पठन कौशल गद्यांश व काव्यांश पर शीर्षक का चुनाव, विषय-वस्तु का बोध, भाषिक बिंदु /संरचना आदि पर अति लघूत्तरात्मक एवं लघूत्तरात्मक प्रश्न				
	अ	एक अपठित गद्यांश (100 से 150 शब्दों के) (1x2=2) (2x3=6)		8	15
	ब	एक अपठित काव्यांश (100 से 150 शब्दों के) (1x3=3) (2x2=4)		7	
2	व्याकरण के लिए निर्धारित विषयों पर विषय-वस्तु का बोध, भाषिक बिंदु /संरचना आदि पर प्रश्न (1x15)				
	व्याकरण				
	1	रचना के आधार पर वाक्य भेद (3 अंक)		3	15
	2	वाच्य (4 अंक)		4	
	3	पद परिचय (4 अंक)		4	
	4	रस (4 अंक)		4	
3	पाठ्यपुस्तक क्षितिज भाग - 2 व पूरक पाठ्यपुस्तक कृतिका भाग - 2				30
	अ	गद्य खंड		13	
		1	क्षितिज से निर्धारित पाठों में से गद्यांश के आधार पर विषय-वस्तु का बोध, भाषिक बिंदु /संरचना आदि पर प्रश्न । (2+2+1)	5	
		2	क्षितिज से निर्धारित गद्य पाठों के आधार पर विद्यार्थियों की उच्च चिंतन व मनन क्षमताओं का आकलन करने हेतु प्रश्न। (2x4)	8	
	ब		काव्य खंड	13	
		1	काव्यबोध व काव्य पर स्वयं की सोच की परख करने हेतु क्षितिज से निर्धारित कविताओं में से काव्यांश के आधार पर प्रश्न (2+2+1)	5	
		2	क्षितिज से निर्धारित कविताओं के आधार पर विद्यार्थियों का काव्यबोध परखने हेतु प्रश्न । (2x4)	8	
	स	पूरक पाठ्यपुस्तक कृतिका भाग - 2			
		पूरक पुस्तिका कृतिका के निर्धारित पाठों पर आधारित एक प्रश्न पूछा जाएगा (विकल्प सहित)। इस प्रश्न का कुल भार चार अंक होगा। (4x1)		4	
4	लेखन				
	अ	विभिन्न विषयों और संदर्भों पर विद्यार्थियों के तर्कसंगत विचार प्रकट करने की क्षमता को परखने के लिए संकेत बिंदुओं पर आधारित समसामयिक एवं व्यावहारिक जीवन से जुड़े हुए विषयों पर 200 से		10	20

		250 शब्दों में किसी एक विषय पर निबंध। (10x1)		
	ब	अभिव्यक्ति की क्षमता पर केन्द्रित औपचारिक अथवा अनौपचारिक विषयों में से किसी एक विषय पर पत्र। (5x1)	5	
	स	विषय से संबंधित 25-50 शब्दों के अंतर्गत विज्ञापन लेखन। (5x1)	5	
		कुल		**80**

नोट : निम्नलिखित पाठों से प्रश्न नहीं पूछे जाएंगे।

क्षितिज (भाग - 2)	• देव • जयशंकर प्रसाद - आत्मकथ्य • स्त्री शिक्षा के विरोधी कुतर्कों का खंडन • संस्कृति
कृतिका (भाग - 2)	• एही ठैयाँ झुलनी हेरानी हो रामा! • मैं क्यों लिखता हूँ?

प्रश्नपत्र का प्रश्नानुसार विश्लेषण एवं प्रारूप

हिंदी पाठ्यक्रम - अ

कक्षा - 9वीं एवं 10वीं

निर्धारित समयावधि : 3 घंटे **अधिकतम अंक : 80**

क्र. सं.	प्रश्नों का प्रारूप	दक्षता परीक्षण/ अधिगम परिणाम	अति-लघूत्तरात्मक 1 अंक	लघूत्तरात्मक 2 अंक	निबंधात्मक -I 4 अंक	निबंधात्मक -II 5 अंक	निबंधात्मक -III 10 अंक	कुल योग
क	अपठित बोध	अवधारणात्मक बोध, अर्थग्रहण, अनुमान लगाना, विश्लेषण करना, शब्दज्ञान व भाषिक कौशल	05	05				15
ख	व्यावहारिक व्याकरण	व्याकरणिक संरचनाओं का बोध और प्रयोग, विश्लेषण एवं भाषिक कौशल	15					15
ग	पाठ्य पुस्तक	प्रत्यास्मरण, अर्थग्रहण (भावग्रहण) लेखक के मनोभावों को समझना, शब्दों का प्रसंगानुकूल अर्थ समझना, आलोचनात्मक चिंतन, तार्किकता, सराहना, साहित्यिक परंपराओं के परिप्रेक्ष्य में मूल्यांकन, विश्लेषण, सृजनात्मकता, कल्पनाशीलता, कार्य-कारण संबंध स्थापित करना, साम्यता एवं अंतरों की पहचान, अभिव्यक्ति में मौलिकता एवं जीवन मूल्यों की पहचान।	02	12	01			30
घ	रचनात्मक लेखन (लेखन कौशल)	संकेत बिंदुओं का विस्तार, अपने मत की अभिव्यक्ति, सोदाहरण समझाना, औचित्य निर्धारण, भाषा में प्रवाहमयता, सटीक शैली, उचित प्रारूप का प्रयोग, अभिव्यक्ति की मौलिकता, सृजनात्मकता एवं तार्किकता				02	01	20
		कुल	1x22 =22	2x17 =34	4x1 =4	5x2 =10	10x1 =10	80

ENGLISH COMMUNICATIVE (Code No. 101)

SYLLABUS

CLASS – X (2018-19)

SECTION - WISE WEIGHTAGE IN ENGLISH COMMUNICATIVE

Section		Total Weightage 80
A	Reading Skills	20
B	Writing Skills with Grammar	30
C	Literature Textbook and Extended Reading Text	30
	TOTAL	80

Note: The Board examination will be of 80 marks, with a duration of three hours.

SECTION A: READING **20 Marks** **50 Periods**

This section will have two unseen passages of a total of 700-750 words as per the details below :

Q.1: A Factual passage 300-350 words with eight Very Short Answer Type (VSA) Questions. **8 marks**

Q. 2: A Discursive passage of 350-400 words with four Short Answer Type Questions of eight marks to test inference, evaluation and analysis and four VSA to test vocabulary and comprehension (two VSA for vocabulary and two for comprehension) **12 marks**

SECTION B: WRITING AND GRAMMAR **30 Marks** **60 Periods**

Writing :-

Q. 3: Formal Letter (Complaints / Inquiry / Placing order / letter to the editor) in about 100-120 words. The questions will be thematically based on the Main Course Book. **8 marks**

Q.4: Writing a short Story based on a given outline or cue/s in about 200-250 words. **10 marks**

Grammar :-

The Grammar syllabus will include the following areas in class X.

1. Tenses
2. Modals
3. Use of passive voice

4. Subject – verb concord
5. Reporting
   (i) Commands and requests
   (ii) Statements
   (iii) Questions
6. Clauses:
   (i) Noun clauses
   (ii) Adverb clauses
   (iii) Relative clauses
7. Determiners
8. Prepositions

The above items may be tested through test types as given below:

Q. 5: Gap filling with one or two words to test Prepositions, Articles, Conjunctions and Tenses . **4 marks**

Q. 6: Editing or Omission **4 marks**

Q. 7: Sentences Re-ordering or Sentence Transformation in context. **4 marks**

SECTION C: LITERATURE TEXTBOOK AND EXTENDED READING TEXT :30 Marks 60 Periods

Q. 8. One out of two extracts from prose / poetry / play for reference to context. Four Very Short Answer Questions: Two questions of one mark each for global comprehension and two questions of one mark each on interpretation.

4 marks

Q. 9. Four Short Answer type Questions from the Literature Reader to test local and global comprehension of theme and ideas (30-40 words each) **2x4 = 8 Marks**

Q.10. One out of two long answer type questions to assess creativity, imagination and extrapolation beyond the text and across the texts. (100-120 words). **8marks**

Q.11. One out of two Very Long Answer Question on theme or plot involving interpretation, inference and character, in about 200-250 words based on prescribed novel text for extended reading. **10 Marks**

Prescribed Books: Published by CBSE, New Delhi

INTERACT IN ENGLISH SERIES

1. Main Course Book .
2. Workbook .
3. Literature Reader .

EXTENDED READING TEXTS (either one):

a. *The Diary of a Young Girl* (1947) by Anne Frank (uploaded on CBSE website)
b. *The Story of My Life* (1903) by Helen Keller (unabridged edition)

NOTE: Teachers are advised to:

(i) Encourage classroom interaction among peers, students and teachers through activities such as role play, group work etc.

(ii) reduce teacher-talk time and keep it to the minimum,

(iii) take up questions for discussion to encourage pupils to participate and to marshal their ideas and express and defend their views, and

Besides measuring attainment, texts serve the dual purpose of diagnosing mistakes and areas of non- learning. To make evaluation a true index of learners' attainment, each language skill is to be assessed through a judicious mixture of different types of questions.

Reading Section: Reading for comprehension, critical evaluation, inference and analysis are skills to be tested.

Grammar: Grammar items mentioned in the syllabus will be taught and assessed over a period of time. There will be no division of syllabus for Grammar.

Listening and Speaking Skills. **50 Periods**

Textbooks

Literature Reader

PROSE	
1. Two Gentlemen of Verona	4. A Shady Plot
2 Mrs. Packletide's Tiger	5. PatolBabu
3. The Letter	6. Virtually True
POETRY	
1. The Frog and the Nightingale	2. Ozymandias
3 . The Rime of Ancient Mariner	
4. Not Marble, nor the Gilded Monuments	5. Snake
DRAMA	
1. The Dear Departed	2. Julius Caesar

Main Course Book	
1. Health and Medicine	4. Environment
2. Education	5. Travel and Tourism
3. Science	6. National Integration
Extended Reading Texts – (either one)	
Diary of a Young Girl – 1947 June 12, 1942 to March 14, 1944 By Anne Frank (unabridged edition uploaded on CBSE website)	**Diary of a Young Girl** – 1947 March 16, 1944 to August 01, 1944 By Anne Frank (unabridged edition , uploaded on CBSE website)
The Story of My Life – 1903, Chapters 1-14 By Helen Keller (unabridged edition)	**The Story of My Life** – 1903 Chapters 15-23 By Helen Keller (unabridged edition)

WORK BOOK* – Suggested Break-up of Units for the purpose of classroom teaching only – NOT FOR TESTING (see the following note).

1 Determiners	8 Comparison
2 Tenses	9 Avoiding Repetition
3 Subject-Verb Agreement	10 Nominalization
4 Non-Finites	11 Modals
5 Relatives	12 Active and Passive
6 Connectors	13 Reported Speech
7 Conditionals	14 Prepositions

Class - X

English Communicative 2018-19 (Code No. 101)

Typology	Testing competencies/ learning outcomes	VSAQ 1 Mark	SAQ 30-40 words 2 marks	LAQ-II 100-120 Words 8 marks	VLAQ 200-250 words (HOTS) 10 marks	Marks
Reading Skills	Conceptual understanding, decoding, analyzing, inferring, interpreting and Vocabulary	12	04	---	---	20
Creative Writing Skills and Grammar	Expressing an opinion, reasoning, justifying, illustrating, appropriacy of style and tone, using appropriate format and fluency. Applying con¬ventions, using inte-grated structures with accuracy and fluency	12	---	01	01	30
Literature Textbook and Extended Reading Texts	Recalling, reasoning, appreciating, applying literary conventions, extrapolating, illustrating and justifying etc. Extracting relevant information, identifying the central theme and sub themes, understanding the writer's message and writing fluently.	04	04	01	01	30
Total		28 x 01 = 28 marks	08 x 02 = 16 marks	02 x 08 = 16 marks	02 x 10 = 20 marks	80 marks

SOCIAL SCIENCE
(Code No. 087)
2018-19

Rationale

Social Science is a compulsory subject upto secondary stage of school education. It is an integral component of general education because it helps the learners in understanding the environment in its totality and developing a broader perspective and an empirical, reasonable and humane outlook. This is of crucial importance because it helps them grow into well-informed and responsible citizens with necessary attributes and skills for being able to participate and contribute effectively in the process of development and nation- building.

The Social Science curriculum draws its content mainly from Geography, History, Political Science and Economics. Some elements of Sociology and Commerce are also included. Together they provide a comprehensive view of society-over space and time, and in relation to each other. Each subject's distinct methods of enquiry help the learners to understand society from different angles and form a holistic view.

Objectives

The main objectives of this syllabus are:

- to develop an understanding of the processes of change and development-both in terms of time and space, through which human societies have evolved.
- to make learners realise that the process of change is continuous and any event or phenomenon or issue cannot be viewed in isolation but in a wider context of time and space.
- to develop an understanding of contemporary India with its historical perspective, of the basic framework of the goals and policies of national development in independent India, and of the process of change with appropriate connections to world development.
- to deepen knowledge about and understanding of India's freedom struggle and of the values and ideals that it represented, and to develop an appreciation of the contributions made by people of all sections and regions of the country.
- to help learners understand and cherish the values enshrined in the Indian Constitution and to prepare them for their roles and responsibilities as effective citizens of a democratic society.
- to deepen the knowledge and understanding of India's environment in its totality, their interactive processes and effects on the future quality of people's lives.
- to facilitate the learners to understand and appreciate the diversity in the land and people of the country with its underlying unity.
- to develop an appreciation of the richness and variety of India's heritage-both

natural and cultural and the need for its preservation.

- to promote an understanding of the issues and challenges of contemporary India- environmental, economic and social, as part of the development process.
- to help pupils acquire knowledge, skills and understanding to face the challenges of contemporary society as individuals and groups and learn the art of living a confident and stress-free life as well as participating effectively in the community.
- to develop scientific temper by promoting the spirit of enquiry and following a rational and objective approach in analysing and evaluating data and information as well as views and interpretations.
- to develop academic and social skills such as critical thinking, communicating effectively both in visual and verbal forms- cooperating with others, taking initiatives and providing leadership in solving others' problems.
- to develop qualities clustered around the personal, social, moral, national and spiritual values that make a person humane and socially effective.

COURSE STRUCTURE CLASS IX

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

No.	Units	Marks	Periods
I	India and the Contemporary World - I	20	60
II	Contemporary India - I	20	55
III	Democratic Politics - I	20	50
IV	Economics	20	50
	Total	80	215

Unit 1: India and the Contemporary World - I

60 Periods

Themes	Objectives
Three themes in the first sub-unit and one each from the second sub unit could be studied. *Sub-unit 1.1 : Events and processes:(All the three themes are compulsory)* In this unit the focus is on three events and processes that have in major ways shaped the identity of the modern world. Each represents a different form of politics, and a specific combination of forces. One event is linked to the growth of liberalism and democracy, one with socialism, and one with a negation of both democracy and socialism.	• In each of the themes in this unit students would be made familiar with extracts of speeches, political declarations, as well as the politics of caricatures, posters and engravings. Students would learn how to interpret these kinds of historical evidences.
I. The French Revolution: (a) The Ancient Regime and its crises. (b) The social forces that led to the revolution. (c) The different revolutionary groups and ideas of the time. (d) The legacy. (Chapter-1)	• Familiarize students with the names of people involved, the different types of ideas that inspired the revolution, the wider forces that shaped it. • Show how written, oral and visual material can be used to recover the history of revolutions.
II. Socialism in Europe and the Russian Revolution: (a)The crises of Tzarism. (b) The nature of social movements between 1905 and 1917. (c) The First World War and foundation of Soviet state. (d) The legacy. (Chapter 2)	• Explore the history of socialism through a study of the Russian revolution.
III. Nazism and the Rise of Hitler: (a)The growth of social democracy (b) The crises in Germany. (b) The basis of Hitler's rise to power. (c) The ideology of Nazism. (d) The impact of Nazism. (Chapter 3)	• Familiarize students with the names of people involved, the different types of ideas that inspired the revolution. • Discuss the critical significance of Nazism in shaping the politics of modern world. • Familiarize students with the speeches and writings of Nazi leaders.

Sub-unit 1.2: Livelihoods, Economies and Societies: The themes in this section will focus on how different social groups grapple with the changes in the contemporary world and how these changes affect their lives. *Any one theme of the following:* **IV. Forest Society and Colonialism:** (a) Relationship between forests and livelihoods. (b) Changes in forest societies under colonialism. Case studies: Focus on two forest movements one in colonial India (Bastar) and one in Indonesia. (Chapter 4) **V. Pastoralists in the Modern World:** (a) Pastoralism as a way of life. (b) Different forms of pastoralism. (c) What happens to pastoralism under colonialism and modern states? Case studies: Focus on two pastoral groups, one from Africa and one from India. (Chapter 5) **VI. Peasants and Farmers:** (a) Histories of the emergence of different forms of farming and peasant societies. (b) Changes within rural economies in the modern world. Case studies: Focus on contrasting forms of rural change and different forms of rural societies (expansion of large-scale wheat and cotton farming in USA, rural economy and the Agricultural Revolution in England, and small peasant production in colonial India) (Chapter 6)	• Discuss the social and cultural world of forest communities through the study of specific revolts. • Understand how oral traditions can be used to explore tribal revolts. • Point to the varying patterns of developments within pastoral societies in different places. • Look at the impact of colonialism on forest societies, and the implication of scientific forestry. • Show the different processes through which agrarian transformation may occur in the modern world. • Consider what happens to pastoralists and pastoralism in the modern world, with the formation of modern states, marking of boundaries, processes of sedentarization, contraction of pastures, and expansion of markets. • Understand how agricultural systems in India are different from that in other countries. • Familiarize students with the idea that large scale farming, small scale production, shifting agriculture operate on different principles and have different histories.

Unit 2: Contemporary India - I

55 Periods

Themes	Objectives
1. India - Size and Location **2. Physical Features of India:** Relief, structure, major physiographic unit.	• To understand the major landform features and the underlying geological structure; their association with various rocks and minerals as well as nature of soil types.
3. Drainage: Major rivers and tributaries, lakes and seas, role of rivers in the economy, pollution of rivers, measures to control river pollution. (Chapter 3)	• To understand the river systems of the country and explain the role of rivers in the evolution of human society.
4. Climate: Factors influencing the climate; monsoon- its characteristics, rainfall and temperature distribution; seasons; climate and human life. (Chapter 4)	• To identify the various factors influencing the climate and explain the climatic variation of our country and its impact on the life of the people. • To explain the importance and unifying role of monsoons.
5. Natural Vegetation and Wild Life: Vegetation types, distribution as well as altitudinal variation, need for conservation and various measures. Major species, their distribution, need for conservation and various measures.	• To find out the nature of diverse flora and fauna as well as their distribution. • To develop concern about the need to protect the biodiversity of our country.
6. Population: Size, distribution, age-sex composition, population change-migration as a determinant of population change, literacy, health, occupational structure and national population policy: adolescents as under-served population group with special needs. (Chapter 6) Note: Data of pg 53, 54 is to be updated by the teacher in the Text Book NCERT, Class IX Geography.	• To analyse the uneven nature of population distribution and show concern about the large size of our population. • To understand the various occupations of people and explain various factors of population change. • To explain various dimensions of national policy and understand the needs of adolescents as under served group.

Project/Activity: Learners may identify songs, dances, festivals and special food preparations associated with certain seasons in their particular region, and whether they have some commonality with other regions of India.

Collection of material by learners on the flora and fauna of the region in which their school is situated. It should include a list of endangered species of the region and also information regarding efforts being made to save them.

Posters:

- River pollution
- Depletion of forests and ecological imbalance

Unit 3: Democratic Politics – I

50 Periods

Themes	Objectives
2. What is Democracy? Why Democracy?: What are the different ways of defining democracy? Why has democracy become the most prevalent form of government in our times? What are the alternatives to democracy? Is democracy superior to its available alternatives? Must every democracy have the same institutions and values? (Chapter 2)	• Develop conceptual skills of defining democracy • Understand how different historical processes and forces have promoted democracy • Developing a sophisticated defence of democracy against common prejudices • Develop a historical sense of the choice and nature of democracy in India
3.Constitutional Design: How and why did India become a democracy? How was the Indian Constitution framed? What are the salient features of the Constitution? How is democracy being constantly designed and redesigned in India? (Chapter 3)	• Introduction to the process of Constitution making • Develop respect for the Constitution and appreciation for Constitutional values • Recognise that Constitution is a living document that undergoes changes
4. Electoral Politics: Why and how do we elect representatives? Why do we have a system of competition among political parties? How has the citizens' participation in electoral politics changed? What are the ways to ensure free and fair elections? (Chapter 4)	• Introduce the idea of representative democracy via competitive party politics • Familiarise with our electoral system and reasons for choosing this • Develop an appreciation of citizen's increased participation in electoral politics • Recognise the significance of the Election Commission

5. Working of Institutions: How is the country governed? What does Parliament do in our democracy? What is the role of the President of India, the Prime Minister and the Council of Ministers? How do these relate to one another? (Chapter 5)	• Provide an overview of central governmental structures • Sensitise to the key role of the Parliament and its procedures
6. Democratic Rights : Why do we need rights in a constitution? What are the Fundamental Rights enjoyed by the citizen under the Indian constitution? How does the judiciary protect the Fundamental Rights of the citizen? How is the independence of the judiciary ensured? (Chapter 6)	• Distinguish between nominal and real executive authorities and functions • Understand the parliamentary system of executive's accountability to the legislature

Unit 4: Economics

50 Periods

Themes	Objectives
1. The Story of Village Palampur: Economic transactions of Palampore and its interaction with the rest of the world through which the concept of production (including three factors of production (land, labour and capital) can be introduced. (Chapter 1)	• Familiarising the children with some basic economic concepts through an imaginary story of a village.
2. People as Resource: Introduction of how people become resource / asset; economic activities done by men and women; unpaid work done by women; quality of human resource; role of health and education; unemployment as a form of non utilisation of human resource; sociopolitical implication in simple form. (Chapter 2)	• Familiarisation of a few population related concepts and sensitization of child that people as asset can participate and contribute in nation building.
3. Poverty as a Challenge: Who is poor (through two case studies: one rural, one urban); indicators; absolute poverty (not as a concept but through a few simple examples)-why people are poor; unequal distribution of resources; comparison between countries; steps taken by government for poverty alleviation. (Chapter 3)	• Understanding of poverty as a challenge and sensitization of the learner. • Appreciation of the government initiative to alleviate poverty.
4. Food Security in India: Source of foodgrains, variety across the nation, famines in the past, the need for self-sufficiency, role of government in food security, procurement of foodgrains, overflowing of granaries and people without food, public distribution system, role of cooperatives in food security (foodgrains, milk and vegetables ration shops, cooperative shops, two-three examples as case studies) (Chapter 4) **Note:** Current status of PDS mentioned in NCERT Class IX Economics to be deleted. (pg no. 49-51)	• Exposing the child to an economic issue which is basic necessities of life. • Appreciate and critically look at the role of government in ensuring food supply.

Suggested Activities / Instructions:

Theme I:

- Give more examples of activities done by different workers and farmers. Numerical problems can also be included.
- Some of the ways through which description of villages are available in the writings of Prem Chand, MN Srinivas and RK Narayan. They may have to be referred.

Theme II:

- Discuss the impact of unemployment.
- Debate on whether all the activities done by women should be included ornot.
- Is it necessary to reduce population growth or family size? Discuss.

Theme IV:

- Visit a few farms in a village and collect the details of foodgrains cultivated.
- Visit a nearby ration shop and collect the details of goods available.
- Visit a regulated market yard and observe how goods are transacted and get the details of the places where the goods come and go.

Class - IX

Project Work: **05 Periods (5 Marks)**

Every student has to compulsorily undertake one project on Disaster Management (Pertaining to class IX curriculum of Disaster Management only). The project has to be carefully designed so as to –

a) Create awareness in learners

b) Enable them to understand and co-relate all aspects of Disaster Management

c) Relate theory with practice

d) Relation of different aspects with life

e) Provide hands on experience.

In order to realize the expected objectives completely, it would be required of the Principals / teachers to muster support from various local authorities and organizations like the Disaster Management Authorities, Relief, Rehabilitation and the Disaster Management Departments of the States, Office of the District Magistrate/ Deputy Commissioners, Fire Service, Police, Civil Defense etc. in the area where the schools are located. The teachers must ensure judicious selection of projects by students.

The distribution of marks over different aspects relating to Project Work is as follows:

S.NO.	ASPECTS	MARKS
1.	Content accuracy and originality	1
2.	Presentation and creativity	1
3.	Process of Project Completion : Initiative, cooperativeness, participation and punctuality	1
4.	Viva or written test for content assimilation	2

The project carried out by the students should subsequently be shared among themselves through interactive sessions such as exhibitions, panel discussions, etc. All documents pertaining to assessment under this activity should be meticulously maintained by the concerned schools. A Summary Report should be prepared highlighting:

- objectives realized through individual or group interactions;
- calendar of activities;
- innovative ideas generated in this process ;
- list of questions asked in viva voce

It is to be noted here by all the teachers and students that the projects and models prepared should be made from eco-friendly products without incurring too much expenditure. The Project Report should be handwritten by the students themselves and comprise of not more than 15 foolscap pages. The record of the project work (internal assessment) should be kept for a period of three months for verification, if any.

PRESCRIBED BOOKS:

1. India and the Contemporary World - I History - Published by NCERT
2. Contemporary India - I Geography - Published by NCERT
3. Democratic Politics - I Published by NCERT
4. Economics - Published by NCERT
5. Together, Towards a Safer India - Part II, a textbook on Disaster Management for Class IX - Published by CBSE

QUESTION PAPER DESIGN – SOCIAL SCIENCE
CLASS -IX SESSION 2018-19

S. No.	Typology of Questions	Very Short Answer (VSA) 1 Mark	Short Answer (SA) 3 Marks	Long Answer (LA) 5 Marks	Total Marks	% Weightage
1	Remembering (Knowledge based simple recall questions, to know specific facts, terms, concepts, principles, or theories; identify, define or recite information)	--	2	2	16	20%
2	Understanding (Comprehension - to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	3	1	2	16	20%
3	Application (Use abstract information in concrete situation, to apply knowledge to new situations, use given content to interpret a situation, provide an example, or solve a problem)	2	3	2	21	26%
4	High Order Thinking Skills (Analysis & Synthesis - Classify, compare, contrast, or differentiate between different pieces of information, Organize and/or integrate unique pieces of information from a variety of sources)	2	3	1	16	20%
5	Creating, Evaluation and Multi-Disciplinary (Generating new ideas, product or ways of viewing things, appraise, judge, and/or justify)	--	2	--	6	08%
6	Map Skill	-	-	1	5*	06%
	Total	1x7=7	3x11 = 33	5x8 = 40	80 (26)	100%

*01 Map question of 5 marks having 5 items carrying 01 mark each.

CLASS-IX
2018-2019
LIST OF MAP ITEMS FOR SOCIAL SCIENCE

Subject - History

Chapter-1: The French Revolution

Outline map of France (For locating and labelling/Identification)

- Bordeaux
- Nantes
- Paris
- Marseilles

Chapter-2: Socialism in Europe and the Russian Revolution

Outline map of World (For locating and labelling/Identification)

- Major countries of First World War

  (Central Powers and Allied Powers)

  Central Powers - Germany, Austria-Hungary, Turkey (Ottoman Empire)

  Allied Powers - France, England, (Russia), America

Chapter-3: Nazism and the Rise of Hitler

Outline map of World (For locating and labelling/Identification)

- Major countries of Second World War

  Axis Powers – Germany, Italy, Japan

  Allied Powers – UK, France, Former USSR, USA

- Territories under German expansion (Nazi power)

  Austria, Poland, Czechoslovakia (only Slovakia shown in the map), Denmark, Lithuania, France, Belgium

Subject-Geography

CH-1: INDIA-SIZE AND LOCATION

1-India-States with Capitals, Tropic of Cancer, Standard Meridian (Location and Labelling)

CH-2: PHYSICAL FEATURES OF INDIA

Mountain Ranges: The Karakoram, The Zasker, The Shivalik, The Aravali, The Vindhya, The Satpura, Western & Eastern Ghats

Mountain Peaks – K2, Kanchan Junga, Anai Mudi

Plateau -Deccan Plateau, Chotta Nagpur Plateau, Malwa Plateau

Coastal Plains- Konkan, Malabar, Coromandal & Northern Circar (Location and Labelling)

CH-3: DRAINAGE

Rivers: (Identification only)

a. The Himalayan River Systems-The Indus,The Ganges, and The Satluj
b. The Peninsular rivers-The Narmada, The Tapi, The Kaveri, The Krishna, The Godavari, The Mahanadi

Lakes: Wular, Pulicat, Sambhar, Chilika, Vembanad, Kolleru

CH-4: CLIMATE

1. Cities to locate: Thiruvananthapuram, Chennai, Jodhpur, Bangalore, Mumbai, Kolkata, Leh, Shillong, Delhi, Nagpur (Location and Labelling)
2. Areas receiving rainfall less than 20 cm and over 400 cm (Identification only)

CH-5: NATURAL VEGETATION AND WILD LIFE

Vegetation Type	:	Tropical Evergreen Forest, Tropical Deciduous Forest, Thorn Forest, Montane Forests and Mangrove- For identification only
National Parks	:	Corbett, Kaziranga, Ranthambor, Shivpuri, Kanha, Simlipal & Manas
Bird Sanctuaries	:	Bharatpur and Ranganthitto
Wild life Sanctuaries	:	Sariska, Mudumalai, Rajaji, Dachigam (Location and Labelling)

CH-6: POPULATION (location and labelling)

The state having highest and lowest density of population

The state having highest and lowest sex ratio

Largest and smallest state according to area

SOCIAL SCIENCE (087)
COURSE STRUCTURE CLASS - X (Session 2018-19)

Time: 3 Hrs. Marks: 80

Units		Marks	Pd
I	India and the Contemporary World - II	20	60
II	Contemporary India - II	20	55
III	Democratic Politics II	20	50
IV	Understanding Economic Development	20	50
	Total	80	215

Unit 1: India and the Contemporary World-II

60 Periods

Themes	Objectives
In Sub-unit 1.1 students are required to choose any two themes. In that sub-unit, theme 3 is compulsory and for second theme students are required to choose any one from the first two themes. *In Sub-units 1.2 and 1.3 students are required to choose any one theme from each. Thus all students are required to study four themes in all.* *Sub-unit 1.1 : Events and processes: Any one from 1 and 2 of the following themes* **1. The Rise of Nationalism in Europe:** (a) The growth of nationalism in Europe after the 1830s. (b) The ideas of Giuseppe Mazzini, etc. (c) General characteristics of the movements in Poland, Hungary, Italy, Germany and Greece. (Chapter 1) **2. The Nationalist Movement in Indo - China:** Factors Leading to Growth of Nationalism in Indo-China (a)French colonialism in Indo-China. (b) Phases of struggle against the French. (c) The ideas of Phan Chu Trinh, Phan Boi Chau, HO Chi Minh (d) The Second World War and the liberation struggle. (e) America and the Vietnam war. (Chapter 2)	• The theme will discuss the forms in which nationalism developed along with the formation of nation states in Europe in the post-1830 period. • Discuss the relationship/difference between European nationalism and anti-colonial nationalisms. • Point to the way the idea of the Formath required nation states became generalized in Europe and elsewhere. • Discuss the difference between French colonialism in Indo-China and British colonialism in India. • Outline the different stages of the anti-imperialist struggle in Indo-China. • Familiarize the students with the differences between nationalist movements in Indo China and India. • Discuss the characteristics of Indian nationalism through a case study of Civil Disobedience Movement. • Analyze the nature of the diverse social movements of the time.

3. Nationalism in India: (a) Impact of First world war, Khilafat, Non-Cooperation and Differing Strands within the Movement. (b) Salt Satyagraha. (c) Movements of peasants, workers, tribals. (d) Limits of Civil Disobedience. (e) The Sense of Collective Belonging. (Chapter 3)	• Familiarize students with the writings and ideals of different political groups and individuals, notably Mahatma Gandhi.
Sub-unit 1.2: Livelihoods, Economies and Societies: Any one of the following themes: 4. **The making of a Global World:** (a) The Pre-modern world (b) The Nineteenth Century Global Economy (Colonialism) (c) The Inter war Economy (Great Depression) (d) Rebuilding the World Economy **5. The Age of Industrialization :** (a) Proto-industrialization and pace of industrial change (b) Life of workers (c) Industrialization in the colonies (d) Early Entrepreneurs & Workers (e) The Peculiarities of Industrial Growth (f) Market for Goods **6. Work, Life & Leisure :** (a) Development of modern cities due to Industrialization in London & Bombay (b) Housing and Land Reclamation (c) Social Changes in the cities (d) Cities and the challenge of the Environment Sub-unit 1.3 : Everyday Life, Culture and Politics (Any one of the following themes): **7. Print Culture and the Modern World:** (a) The history of print in Europe. (b) The growth of press in nineteenth century India. (c) Relationship between print culture, public debate and politics. (Chapter 7)	• Show that globalization has a long history and point to the shifts within the process. • Analyze the implication of globalization for local economies. • Discuss how globalization is experienced differently by different social groups. • Familiarize students with the Pro-to-Industrial phase and Early – factory system. • To make them understand, about the process of industrialization and its impact on labour class. • To explain them about industrialization in the colonies in reference to Textile industries. • Show the difference between urbanization in two different contexts. A focus on Bombay and London will allow the discussions on urbanization and industrialization to complement each other. • Discuss the link between print culture and the circulation of ideas. • Familiarize students with pictures, cartoons, extracts from propaganda literature and newspaper debates on important events and issues in the past.

8. Novels, Society and History: (a) Emergence of the novel as a genre in the west. (b) The relationship between the novel and changes in modern society. (c) Early novels in nineteenth century India. (d) A study of two or three major writers. (Chapter 8)	• Show that forms of writing have a specific history, and that they reflect historical changes within society and shape the forces of change. • Familiarize students with some of the ideas of writers who have had a powerful impact on society.

Unit 2: Contemporary India - II

55 Periods

Themes	Objectives
1. Resources and Development: Types - natural and human; Need for resource planning, natural resources, land as a resource, soil types and distribution; changing land-use pattern; land degradation and conservation measures. (Chapter 1)	• Understand the value of resources and the need for their judicious utilisation and conservation.
3. Water Resources: Sources, distribution, utilisation, multi-purpose projects, water scarcity, need for conservation and management, rainwater harvesting. (One case study to be introduced) (Chapter 3)	• Understand the importance of water as a resource as well as develop awareness towards its judicious use and conservation.
4. Agriculture: Types of farming, major crops, cropping pattern, technological and institutional reforms; their impact; contribution of Agriculture to national economy-employment and output. Note: Content of pg no. 44-47 of NCERT Textbook is to be deleted. (Chapter 4)	• Understand the importance of agriculture in national economy. • Identify various types of farming and discuss the various farming methods; describe the spatial distribution of major crops as well as understand the relationship between rainfall regimes and cropping pattern. • Explain various government policies for institutional as well as techno-logical reforms since independence.

5. Minerals and Energy Resources: Types of minerals, distribution (Note: on map only) use and economic importance of minerals, conservation, types of power resources: conventional and non-conventional, distribution and utilization, and conservation. (Chapter 5)	• Discuss various types of minerals as well as their uneven nature of distribution and explain the need for their judicious utilisation. • Discuss various types of conventional and non- conventional resources and their utilization.
6. Manufacturing Industries: Types, spatial distribution (Note: on map only) contribution of industries to the national economy, industrial pollution and degradation of environment, measures to control degradation. **Note :** Content mentioned on page no. 74-75 of NCERT, Geography Text book i.e. Aluminium Smelting, Chemical Industries, Fertilizer Industry, Cement Industry is not required to be delivered in class room during instruction.	• Discuss the importance of industries in the national economy as well as understand the regional disparities which resulted due to concentration of industries in some areas. • Discuss the need for a planned industrial development and debate over the role of government towards sustainable development.
7. **Life Lines of National Economy :** Importance of means of Communication and transportation, Trade & Tourism (Chapter 7)	• To explain the importance of transport and communication in the ever shrinking world. • To understand the role of trade in the economic development of a country.

Project / Activity:

- Learners may collect photographs of typical rural houses, and clothing of people from different regions of India and examine whether they reflect any relationship with climatic conditions and relief of the area.
- Learners may write a brief report on various irrigation practices in the village and the change in cropping pattern in the last decade.

Posters:

- Pollution of water in the locality.
- Depletion of forests and the greenhouse effect.

Note: Any similar activity may be taken up.

Unit 3: Democratic Politics - II

50 Periods

Themes	Objectives
1 & 2.Power Sharing & Federalism: Why and how is power shared in democracies? How has federal division of power in India helped national unity? To what extent has decentralisation achieved this objective? How does democracy accommodate different social groups? (Chapter 1&2)	• Introduce students to the centrality of power sharing in a democracy. • Understand the working of spatial and social power sharing mechanisms. • Analyse federal provisions and institutions. • Understand the new Panchayati Raj institutions in rural and urban areas.
3&4.Democracy and Diversity & Gender, Religion and Caste: Are divisions inherent to the working of democracy? What has been the effect of caste on politics and of politics on caste? How has the gender division shaped politics? How do communal divisions affect democracy? (Chapter 3 & 4)	• Analyse the relationship between social cleavages and political competition with reference to Indian situation. • Understand and analyse the challenges posed by communalism to Indian democracy. • Understand the enabling and disabling effects of caste and ethnicity in politics. • Develop a gender perspective on politics.
5. Popular Struggles and Movements (Note : Ch-5 is to be done as project work only and will not be evaluated in theory)	• Understand the vital role of struggle in the expansion of democracy.
6. Political Parties: What role do political parties play in competition and contestation? Which are the major national and regional parties in India? (Chapter 6)	• Analyse party systems in democracies. • Introduction to major political parties in the country.
7. Outcomes of Democracy: Can or should democracy be judged by its outcomes? What outcomes can one reasonably expect of democracies? Does democracy in India meet these expectations? Has democracy led to development, security and dignity for the people? What sustains democracy in India? (Chapter 7)	• Analyse the role of social movements and non- party political formations. • Introduction to the difficult question of evaluating the functioning of democracies. • Develop the skills of evaluating Indian democracy on some key dimensions: development, security and dignity for the people.

8. Challenges to Democracy: Is the idea of democracy shrinking? What are the major challenges to democracy in India? How can democracy be reformed and deepened? What role can an ordinary citizen play in deepening democracy? (Chapter 8)	• Understand the causes for continuation of democracy in India. • Distinguish between sources of strength and weaknesses of Indian democracy. • Reflect on the different kinds of measures possible to deepen democracy. • Promote an active and participatory citizenship.

Unit 4: Understanding Economic Development

50 Periods

Themes	Objectives
1. Development: The traditional notion of development; National Income and Per-capita Income. Growth of National Income - critical appraisal of existing development indicators (PCI, IMR, SR and other income and health indicators) The need for health and educational development; Human Development Indicators (in simple and brief as a holistic measure of development.	• Familiarisation of some macroeconomic concepts. • Sensitizing the child about the rationale for overall human development in our country, which include the rise of income, improvements in health and education rather than income. • It is necessary to raise question in minds of the children whether the increase in income alone is sufficient for a nation. • How and why people should be healthy and provided with education.
2. Sectors of the Indian Economy: *Sectors of Economic Activities; Historical change in sectors; Rising importance of tertiary sector; Employment Generation; Division of Sectors- Organised and Unorganised; Protective measures for unorganised sector workers. (Chapter 2)	• To make aware of a major employment generating sector. • Sensitise the learner of how and why governments invest in such an important sector.
3. Money and Credit: Role of money in an economy: Formal and Informal financial institutions for Savings and Credit - General Introduction; Select one formal institution such as a nationalized commercial bank and a few informal institutions; Local money lenders, landlords, chit funds and private finance companies. (Chapter 3) **(Note : Ch-3 will also be evaluated in theory)**	• Familiarize the concept of money as an economic concept. • Create awareness of the role of financial institutions from the point of view of day-to- day life.

4. Globalisation and the Indian Economy: Production across countries, Foreign trade and Interaction of Markets, what is Globalization? Factors, WTO, Impact, Fair Globalization (Chapter 4)	• Provide children with some idea about how a particular economic phenomenon is influencing their surroundings and day-to-day life.
5. Consumer Rights: ***How consumer is exploited (one or two simple case studies) factors causing exploitation of consumers; Rise of consumer awareness; how a consumer should be in a market; role of government in consumer protection. (Chapter 5)	• Making the child aware of her rights and duties as a consumer; • Familiarizing the legal measures available to protect from being exploited in markets.

Suggested Activities / Instructions:

Theme 2*: Visit to banks and money lenders / pawnbrokers and discuss various activities that you have observed in banks in the classroom.

Participate in the meetings of Self Help Groups, which are engaged in micro credit schemes in the locality of learners and observe issues discussed.

Theme 4**: Provide many examples of service sector activities. Use numerical examples, charts and photographs.

Theme 5***: Collect logos of standards available for various goods and services. Visit a consumer court nearby and discuss in the class the proceedings; Collect stories of consumer exploitation and grievances from newspapers and consumer courts.

Class - X

Project Work: **05 Periods (5 Marks)**

Every student has to compulsorily undertake any one project on the following units/topics:

1. Disaster Management (Pertaining to class X curriculum of Disaster Management only).

   OR

2. Popular Struggles and Movements

   OR

3. Money and Credit

The project has to be carefully designed so as to –

a) Create awareness in learners

b) Enable them to understand and co-relate all aspects of selected topic

c) Relate theory with practice

d) Relation of different aspects with life

e) Provide hands on experience

The distribution of marks over different aspects relating to Project Work is as follows:

S.NO.	ASPECTS	MARKS
1.	Content accuracy and originality	1
2.	Presentation and creativity	1
3.	Process of Project Completion : Initiative, cooperativeness, participation and punctuality	1
4.	Viva or written test for content assimilation	2

The projects carried out by the students in different topics should subsequently be shared among themselves through interactive sessions such as exhibitions, panel discussions, etc. All documents pertaining to assessment under this activity should be meticulously maintained by concerned schools. A Summary Report should be prepared highlighting:

- objectives realized through individual or group interactions;
- calendar of activities;
- innovative ideas generated in this process ;
- list of questions asked in viva voce

It is to be noted here by all the teachers and students that the projects and models prepared should be made from eco-friendly products without incurring too much expenditure. The Project Report should be handwritten by the students themselves and comprise of not more than 15 foolscap pages. Records pertaining to projects (internal

assessment) of the students will be maintained for a period of three months from the date of declaration of result for verification at the discretion of Board. Subjudiced cases, if any or those involving RTI / Grievances may however be retained beyond three months.

PRESCRIBED BOOKS:

1. India and the Contemporary World-II (History) - Published by NCERT
2. Contemporary India II (Geography) - Published by NCERT
3. Democratic Politics II (Political Science) - Published by NCERT
4. Understanding Economic Development - Published by NCERT
5. Together Towards a Safer India - Part III, a textbook on Disaster Management - Published by CBSE

QUESTION PAPER DESIGN – SOCIAL SCIENCE
CLASS - X SESSION 2018-19

S. No.	Typology of Questions	Very Short Answer (VSA) 1 Mark	Short Answer (SA) 3 Marks	Long Answer (LA) 5 Marks	Total Marks	% Weightage
1	Remembering (Knowledge based simple recall questions, to know specific facts, terms, concepts, principles, or theories; identify, define or recite information)	--	2	2	16	20%
2	Understanding (Comprehension - to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	3	1	2	16	20%
3	Application (Use abstract information in concrete situation, to apply knowledge to new situations, use given content to interpret a situation, provide an example, or solve a problem)	2	3	2	21	26%
4	High Order Thinking Skills (Analysis & Synthesis - Classify, compare, contrast, or differentiate between different pieces of information, Organize and/or integrate unique pieces of information from a variety of sources)	2	3	1	16	20%
5	Creating, Evaluation and Multi-Disciplinary (Generating new ideas, product or ways of viewing things, appraise, judge, and/or justify)	--	2	--	6	08%
6	Map Skill	--	--	1	5*	06%
	Total	1x7=7	3x11 = 33	5x8 = 40	80 (26)	100%

*01 Map question of 5 marks having 5 items carrying 01 mark each.

CLASS –X 2018-2019
LIST OF MAP ITEMS FOR SOCIAL SCIENCE

A. History - Outline Political Map of India

Lesson-3 Nationalism in India – (1918 – 1930)
For locating and labelling / Identification

1. Indian National Congress Sessions:

Calcutta (Sep. 1920)
Nagpur (Dec. 1920)
Madras (1927)
Lahore (1929)

2. Important Centres of Indian National Movement

(Non-cooperation and Civil Disobedience Movement)

(i) Champaran (Bihar) - Movement of Indigo Planters
(ii) Kheda (Gujrat) - Peasant Satyagrah
(iii) Ahmedabad (Gujarat) - Cotton Mill Workers Satyagraha
(iv) Amritsar (Punjab) - Jallianwala Bagh Incident
(v) Chauri Chaura (U.P.) - Calling off the Non Cooperation Movement
(vi) Dandi (Gujarat) - Civil Disobedience Movement

B. GEOGRAPHY

Outline Political Map of India

Chapter 1: Resources and Development

Identification only: Major soil Types

Chapter 3: Water Resources

Locating and Labelling –

Dams:

(1) Salal
(2) Bhakra Nangal
(3) Tehri
(4) Rana Pratap Sagar
(5) Sardar Sarovar
(6) Hirakud
(7) Nagarjuna Sagar
(8) Tungabhadra (Along with rivers)

Chapter 4: Agriculture

Identification only

(a) Major areas of Rice and Wheat
(b) Largest / Major producer states of Sugarcane; Tea; Coffee; Rubber; Cotton and Jute

Chapter: 5 Mineral and Energy Resources

Minerals: (Identification only)

(I) Iron ore mines:
Mayurbhanj
Durg
Bailadila
Bellary
Kudremukh

(II) Mica mines:
Ajmer
Beawar
Nellore
Gaya
Hazaribagh

(III) Coal mines:
Raniganj
Jharia
Bokaro
Talcher
Korba
Singrauli
Singareni
Neyvali

(IV) Oil Fields:
Digboi
Naharkatia
Mumbai High
Bassien
Kalol
Ankaleshwar

(V) Bauxite Deposits:
The Amarkantak plateau
Maikal hills
The plateau region of Bilaspur-Katni
Orissa Panchpatmali deposits in Koraput district

(VI) Mica deposits:
The Chota Nagpur plateau
Koderma Gaya-Hazaribagh belt of Jharkhand
Ajmer
Nellore mica belt

Power Plants:
(Locating and Labelling only)

(a) Thermal :

Namrup
Talcher
Singrauli
Harduaganj
Korba
Uran
Ramagundam
Vijaywada
Tuticorin

(b) Nuclear:

Narora
Rawat Bhata
Kakrapara
Tarapur
Kaiga
Kalpakkam

Chapter 6: Manufacturing Industries
Locating and Labelling Only

(1) Cotton Textile Industries:

Mumbai
Indore
Ahmedabad
Surat
Kanpur
Coimbatore
Madurai

(2) Iron and Steel Plants:

Burnpur
Durgapur
Bokaro
Jamshedpur
Raurkela
Bhilai
Vijaynagar
Bhadravati
Vishakhapatnam
Salem

(3) Software Technology Parks:

Mohali
Noida

Jaipur
Gandhinagar
Indore
Mumbai
Pune
Kolkata
Bhubaneshwar
Vishakhapatnam
Hyderabad
Bangalore
Mysore
Chennai
Thiruvananthapuram

Chapter 7 Lifelines of National Economy
Identification Only: Golden Quadrilateral, North-South Corridor, East-West Corridor.

National Highways:
NH-1
NH-2
NH-7

Locating and Labelling:
Major Ports:
Kandla
Mumbai
Jawahar Lal Nehru
Marmagao
New Mangalore
Kochi
Tuticorin
Chennai
Vishakhapatnam
Paradip
Haldia
Kolkata

International Airports:
Amritsar (Raja Sansi)
Delhi (Indira Gandhi International)
Mumbai (Chhatrapati Shivaji)
Thiruvananthapuram (Nedimbacherry)
Chennai (Meenam Bakkam)
Kolkata (Netaji Subhash Chandra Bose)
Hyderabad (Rajiv Gandhi)

Note: Items of Locating and Labelling may also be given for Identification.

FOUNDATION OF INFORMATION TECHNOLOGY (FIT)
(CODE No. 165)
(For Session 2018-19 only)

Learning Outcomes:

- Understanding organization of a computer system and networking.
- Basic understanding of database design.
- Ability to work on office tools such as word processor, spreadsheet and presentation.
- Ability to apply knowledge and practice on office tools to develop IT applications.
- Ability to use Indian languages in developing an IT application.
- Ability to design HTML webpage.
- Appreciation/awareness of societal impacts of information technology in business. Public services, education, health etc.
- Awareness of basic information security issues.

Job Opportunities:

- Upon completion of this optional course on FIT at secondary level, one will be able to assist in IT-enabled office work.

CLASS X

Theory: 40 Marks **Practical: 60 Marks**

Unit	Description	Marks	
		Theory	Practical
Unit I	Basics of Information Technology	10	-
Unit II	Information Processing Tools	25	30
Unit III	Societal Impacts of IT	05	-
Unit IV	IT Applications	-	30
	Total	**40**	**60**

CLASS X : (THEORY)

Time: 2½hours **Marks : 40**

Unit I: Basics of Information Technology

Internet: World Wide Web, Web servers, Web Clients, Web sites, Web Pages, Web Browsers, Blogs, News groups, HTML, Web address, E-mail address, URL, HTTP, FTP, downloading and uploading files from remote site;

Services available on Internet: Information Retrieval, Locating sites using search engines and finding people on the net;

Web Services: Chat, email, Video Conferencing, e-Learning, e-Banking, e-Shopping, e-Reservation, e-Governance, e-Groups, Social Networking.

Unit II: Information Processing Tools

Office Tools

Database Management Tool: Basic Concepts and need for a database, Creating a database, DataTypes-Text, Number, Date, Time, Setting the Primary Key, Entering data into a

database, Inserting and deleting Fields, Inserting and deleting Records, Field Size, Default Value, Creating Query using Design view.

Information Representation Methods

Hyper Text Markup Language

Introduction to Web Page Designing using HTML, Creating and saving an HTML document, accessing a web page using a web browser (Google Chrome, Internet Explorer, Mozilla Firefox, Opera, Apple Safari, Net scape Navigator);

Elements in HTML: Container and Empty elements, Designing web pages using the following elements:

HTML, HEAD, TITLE, BODY (Attributes: BACKGROUND, BGCOLOR, TEXT, LINK, ALINK, VLINK, LEFTMARGIN, TOPMARGIN), FONT(Attributes: COLOR, SIZE, FACE), BASEFONT(Attributes: COLOR, SIZE, FACE), CENTER, BR (Break), HR(Horizontal Rule, Attributes: SIZE, WIDTH, ALIGN, NOSHADE, COLOR) inserting comments, H1..H6 (Heading), P (Paragraph), B (Bold), I (Italics), U (Underline), UL & OL (Unordered List & Ordered List Attributes: TYPE, START), LI (List Item)

Insertion of images using the element IMG (Attributes: SRC, WIDTH, HEIGHT, ALT, ALIGN), Super Script SUP, Subscript SUB, Creating Table using the element TABLE (BACKGROUND, BGCOLOR, WIDTH, CELLSPACING, CELLPADDING, BORDER), TR, TH, TD, ROWSPAN, COLSPAN, Internal and External Linking between Web Pages:

Significance of linking, A - Anchor Element (Attributes: NAME, HREF, TITLE, MAILTO)

XML (Extensible Markup Language)

Introduction to XML, Difference between XML and HTML with respect to the following: Data separation, data sharing, document structure, tags, nesting of elements, attributes, values. XML Elements - Defining own tags in XML, root elements, child elements and their attributes; Comments in XML, White space and new line in XML, well formed XML documents, validating XML documents, XML Parser, Viewing XML documents in a web browser.

Unit III: Societal Impacts of IT

Information Security: Virus, Worms, Trojans and Anti-Virus Software, Spyware, Malware, Spams, Data Backup and recovery tools and methods, Online Backups, Hacker and Cracker with regard to Computer Data and Applications, Social Networking Information security provisions in e-commerce, Benefits of ICT in Education, Healthcare, Governance, Virtual, School, emergence of Knowledge economy, Impact of ICT on Society: Knowledge based society, Infomania, Digital Unity and Digital Divide.

Unit IV: IT Applications

Students are suggested to work on the following suggestive areas using Database Management Tool and HTML on topics implementing the tools/elements covered in the course.

Domains:

Database Design:

- Personal Data Record File
- School/Class Result Record
- Employee Payroll
- Stock Inventory
- Vehicle Parking Record File

Webpage Design:

- My Home Page
- My School

- My Family
- Personal Blog with Name, Photo, Areas of Interest, School, State, Country
- School Website - Infrastructure, Facilities, Uniform, Motto, School Pictures, Extra-Curricular Activities, Subject and Language Options
- Travel and Tourism
- Statistics on India - State wise Area, Population, Literacy (Enrolment in Primary, Middle, Secondary, Senior Secondary), Gender Ratio
- Environment (Save Energy) and Pollution (Global Warming)

CLASS X : (Practical)

Time : 4 hours **Marks : 60**

(A) HANDS ON EXPERIENCE **30 Marks**

1. Database Design:*

- Creating and entering data into a database
- Setting the primary key
- Inserting meaningful data and organising
- Creating Query with the same design view of the table.

2. Webpage Designing *

- Adding a title to webpage
- Formatting Text
- Adding Ordered/Unordered Lists
- Writing Text in Paragraphs
- Inserting Image
- Adding content in Tabular Form
- Adding Internal / External links.

The students are supposed to know the tools and style for designing domain specific web pages from real life applications and the topics mentioned in the syllabus.

3. XML Assignment*

Students to be asked to create an XML document on the lines of XML concepts covered in theory syllabus.

**Printouts of the document(s) should be attached with the answer sheet.*

(B) IT APPLICATIONS REPORT FILE **15 Marks**

Students are supposed to make an IT Application Report File containing real life assignments using a Database Management Tool and HTML

- 5 Database Solutions
- 8 HTML source code along with browser view
- 2 XML Documents Source Code and View

(C) IT Application project using database and website design in a domain such as School Management, Public Services Computing, Business Computing. **10 Marks**

(D) VIVA VOCE **05 Marks**

Viva based on IT applications report file.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

(Code No. 166)

(For Session 2018-19 only)

Learning Outcomes:

1. Ability to develop a basic know how of one's computer system.
2. Ability to use Internet and its services.
3. Ability to efficiently work on Image editing tools.
4. Ability to design a website using HTML.
5. Ability to design Online forms using HTML.
6. Ability to apply style sheets using CSS.
7. Ability to recognize security threats and take preventive measures.

COURSE STRUCTURE

Class X

Theory: 40 Marks **Practical: 60 Marks**

Unit	Name of the Unit	Marks	
		Theory	**Practical**
Unit I	Computer Components and Interconnection	5	-
Unit II	Advance GIMP	10	20
Unit III	Advanced HTML	20	40
Unit IV	Network Security	5	-
	Total	**40**	**60**

Class-X

Theory Paper

Duration : 2½ hours **Marks : 40**

Unit I: Computer Components and Interconnection **Marks: 5**

Computer System and its definition, Hardware, Basic components of a Computer System, Input Unit, Central processing Unit/CPU, Output unit and functions, Memory, types of memory, Primary Memory, RAM (Random Access Memory), ROM(Read Only Memory), SECONDARY MEMORY, Binary digit, concept of bit and bytes, Types of computers (Analog, Digital, Hybrid), characteristics of computers, types of software (System Software, Application Software, Utility Softwares, classification of Programming Languages Ports and Cables)

Unit II: Advance GIMP **Marks: 10**

Toolbox-Move tool, Alignment tool, Scale tool, Shear tool, Perspective tool, Flip tool, Blend tool, Blur/Sharpen tool, Smudge tool, Dodge / Burn tool Painting in GIMP-Pencil and paintbrush tool

Operations on Layers (Adding new layers, Renaming a Layer, Deleting a Layer, Merging a Layer, Scaling a layer, Duplicating a Layer)

Masking-Introduction and example, editing a mask

Unit III: Advanced HTML **Marks: 20**

Representing data in Tabular forms, Concept of Table

Attributes <table> ..</table> ,<TR>..</TR>, <TD>..</TD>TH, Attributes: Colspan, ROWSPAN

Properties: Align, width, Border, Color, Bgcolor, background, <CAPTION> tag

Working with frames, frame attributes (<frameset..>), Attributes of <frameset>; Rows, Cols, Border, Frameborder, Framespacing.
Frameset element and its attribute (Src, Scrolling, Noresize), target attribute in anchor tag.

Working with HTML Forms
Introduction and explanation of forms, Tags and attributes used in Form, <Form>..</ Form> INPUT tag and its attributes (Name, Size, Maxlength, Type)
Fields displayed by type attribute, (Text Box Field, Radio Buttons, Check boxes, command Button, Drop down Box , TEXTAREA and SELECT)

DHTML & CSS
Introduction to DHTML, Features and uses of DHTML, Components of DHTML, Cascading style sheet, Advantages and Limitations of CSS,
Methods of applying CSS to an HTML document: In-line (the attribute style) and Internal (the tag style), External (link to style sheet), creating and saving cascading style sheets
Introduction and familiarization of Font: Font-Family, Style, Size, Variant, Weight; Text and Background properties; Colour properties - Text Indent, Align, Decorating, Spacing, Transform, Text alignment, decoration and transformation, Foreground and Background colour, Image and Repeat
Use of margin and margin properties, Concept of padding and Border ; Padding and Border Properties
Absolute and Relative Positioning

Unit IV: Network Security **Marks: 5**
Concepts: Cyber Law, Cyber Crime, Fire wall, Cookies, Hackers and Crackers
Open Source Software, Free ware, Shareware, Licensing scheme, Copywriting, GPL(General Public Licence), Licensed software, Copyright software, refrain from copyright violation and piracy etc.

Class X
PRACTICAL WORK

Duration: 4 hours **Marks : 60**

Design of a Practical Question Paper

Instructions on the basis of syllabus, distribution of marks and conduction of practical examination have been provided.
The examiner is advised to set the question paper according to the prescribed curriculum and distribution of marks.

(A) HANDS ON EXPERIENCE **30 marks**

GIMP 10 marks
ADVANCED HTML 20 marks

(B) IT Application Report File **15 Marks**

Students are supposed to make a IT Application Report File Containing Real life assignments/ presentations using GIMP and Advanced HTML.

- At least 5 Activities related to Advance GIMP
- At least 10 webpages covering the concepts covered such as Tables, Frames, Forms, DHTML and CSS.

(C) Project Work **10 Marks**

Developing a website on a topic integrating all the concepts covered using advance GIMP and advanced HTML.

(D) Viva Voice **5 Marks**

Suggested Activities

1. Find out and make a list of the types of memory available in the market and their storing capacity. Also find out, about the various utility and application software(s) used, and share this information through social networking sites. Create a document/ spreadsheet/form through Office Web Apps e.g. google docs/sky drive and share it with your friends.
2. Create a collage from the pictures of any recent event held in school.
3. Design a digital poster for any state of your choice in India depicting their tourist spots and thus promoting tourism.
4. Collect and import few pictures or images of important monuments (tourist spots). Add layers and place a picture in each layer. Merge layers and edit layers and use mask to selectively colour the images.
5. Create a website for a Computer Hardware firm. The firm deals in various output units and various types of memory. Collect information about various brands of printers, scanners, memory etc. available in market. Show the various product details in tabular form on each web page.
6. Create following online forms:
   a) Adhaar Card
   b) Railway Reservation form
7. Using HTML design a web site for your school.
8. Using HTML design a web site providing information about Open source, free ware, licensed software(s).
9. Collect information of Cyber Laws and create a web site.

Note: Activities mentioned above are only suggestive. Teachers should encourage children to innovate.

COMPUTER APPLICATIONS
CLASS IX
(Code No.165)
Effective from the session 2018-19

1. Prerequisites

No background in computer science is required.

2. Learning Outcomes

1. Familiarity with basics of computers.
2. Ability to navigate the file system.
3. Create and edit rich text documents, spreadsheets, and presentations.
4. Perform basic data manipulation using spreadsheets.
5. Use Indian languages in documents.
6. Send and receive emails, follow email etiquette, and communicate over the internet.
7. Create and upload videos.
8. Safe and correct usage of websites, social networks, chat sites, and email.

3. Distribution of Marks

Unit No.	Unit Name	Marks
1.	Basics of Information Technology	5
2.	Cyber safety	10
3.	Office Tools	5
4.	Scratch/Python	10
5.	Lab Exercises	70
	Total	100

4.1. Unit 1: Basics of Information Technology

- Familiarity with the basics of computers: design of computers, and overview of communication technologies
- Computer Systems: characteristics of a computer, components of a computer system – CPU, memory, storage devices and I/O devices
- Memory: primary (RAM and ROM) and secondary memory
- Storage devices: hard disk, CD ROM, DVD, pen/flash drive, memory stick
- I/O devices: keyboard, mouse, monitor, printer, scanner, web camera
- Types of software: system software (operating systems), application software, mobile applications
- Operating systems: kernel, device drivers, and file systems (very basic idea)
- Computer networking: wired/wireless communication, common protocols: Wi-Fi, Bluetooth, cloud computers (private/public)
- Multimedia: images, audio, video, animation
- Chat sites, and social networks.

4.2. Unit 2: Cyber-safety

- Safely browsing the web and using social networks: identity protection, proper usage of passwords, privacy, confidentiality of information, cyber stalking, reporting cybercrimes
- Safely accessing websites: viruses and malware

4.3. Unit 3: Office tools

- Introduction to a word processor: create and save a document.
- Edit and format text: text style (B, I, U), font type, font size, text colour, alignment of text. Format paragraphs with line and/or paragraph spacing. Add headers and footers, numbering pages, grammar and spell check utilities, subscript and superscript, insert symbols, use print preview, and print a document.
- Insert pictures, change the page setting, add bullets and numbering, borders and shading, and insert tables – insert/delete rows and columns, merge and split cells.
- Use auto-format, track changes, review comments, use of drawing tools, shapes and mathematical symbols.
- Presentation tool: understand the concept of slide shows, basic elements of a slide, different types of slide layouts, create and save a presentation, and learn about the different views of a slide set – normal view, slide sorter view and hand-outs.
- Edit and format a slide: add titles, subtitles, text, background, and watermark, headers and footers, and slide numbers.
- Insert pictures from files, create animations, add sound effects, and rehearse timings.
- Spreadsheets: concept of a worksheet and a workbook, create and save a worksheet.
- Working with a spreadsheet: enter numbers, text, date/time, series using auto fill; edit and format a worksheet including changing the colour, size, font, alignment of text; insert and delete cells, rows and columns. Enter a formula using the operators (+,-,*, /), refer to cells, and print a worksheet.
- Use simple statistical functions: SUM (), AVERAGE (), MAX (), MIN (), IF () (without compound statements); embed charts of various types: line, pie, scatter, bar and area in a worksheet.

4.4. Unit 4: Scratch or Python

Alternative 1: Educational programming language - Scratch

- Introduction to Scratch.
- Drag and drop commands, creating simple scripts, repeating blocks of commands.
- Discuss x-y plane, create scripts to move the cat (Scratch mascot).
- Create a script to draw diagrams using the pen feature.

Alternative 2: Python - (provided as an option to children with special needs)

- Introduction to Python
- A simple “Hello World" program
- Running a Python program
- The notion of data-types and variables: integer, float, string
- Arithmetic operations: +, -, *, /

5. Lab Exercises

- Basic I/O devices: use the mouse and keyboard, draw a figure.
- Working with the operating system: Navigation of the file system using a mouse and keyboard, and then doing the same with shell commands.
- Word processing: create a text document, create a letter, report, and greeting card.
- Create a text document with figures in it. It should describe a concept taught in another course.
- Discuss the following in a text document about the basic organisation of a computer: CPU, memory, input/output devices, hard disk.
- Create a text document in an Indian language other than English.
- Create a presentation.
- Create a presentation with animation.
- Create and edit existing images, and then include them in a presentation.

- Animate pictures and text with sound effects in a presentation
- Create a simple spreadsheet and perform the following operations: min, max, sum, and average.
- Create different types of charts using a spreadsheet: line, bar, and pie.
- Send an email to your friends. Attach some documents that you have prepared earlier. Put some friend in the CC and BCC list. Interact with friends to find out who was in the BCC list.
- Do an online chat with multiple friends. Transmit documents using the chat platform.
- Create a video and upload it on YouTube.
- Write basic Scratch/Python programs.

Breakup of marks for the Practicals:

S.No.	**Unit Name**	**Marks**
1.	Lab Test (30 marks)	
	Proficiency with the OS	2.5
	Word processing	5
	Handling spreadsheets	7.5
	Creating presentations	7.5
	Writing basic Python/Scratch programs	7.5
2.	Report File + viva (25 marks)	
	Report file:4 documents each with a word processor, spreadsheet, and presentation tool	20
	Viva voce (based on the report file)	5
3.	Project (that uses most of the concepts that have been learnt)	15

MATHEMATICS (IX-X)

(CODE NO. 041)

Session 2018-19

The Syllabus in the subject of Mathematics has undergone changes from time to time in accordance with growth of the subject and emerging needs of the society. The present revised syllabus has been designed in accordance with National Curriculum Framework
2005 and as per guidelines given in the Focus Group on Teaching of Mathematics which is to meet the emerging needs of all categories of students. For motivating the teacher to relate the topics to real life problems and other subject areas, greater emphasis has been laid on applications of various concepts.

The curriculum at Secondary stage primarily aims at enhancing the capacity of students to employ Mathematics in solving day-to-day life problems and studying the subject as a separate discipline. It is expected that students should acquire the ability to solve problems using algebraic methods and apply the knowledge of simple trigonometry to solve problems of height and distances. Carrying out experiments with numbers and forms of geometry, framing hypothesis and verifying these with further observations form inherent part of Mathematics learning at this stage. The proposed curriculum includes the study of number system, algebra, geometry, trigonometry, mensuration, statistics, graphs and coordinate geometry, etc.

The teaching of Mathematics should be imparted through activities which may involve the use of concrete materials, models, patterns, charts, pictures, posters, games, puzzles and experiments.

Objectives

The broad objectives of teaching of Mathematics at secondary stage are to help the learners to:

- consolidate the Mathematical knowledge and skills acquired at the upper primary stage;
- acquire knowledge and understanding, particularly by way of motivation and visualization, of basic concepts, terms, principles and symbols and underlying processes and skills;
- develop mastery of basic algebraic skills;
- develop drawing skills;
- feel the flow of reason while proving a result or solving a problem;
- apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method;
- to develop ability to think, analyze and articulate logically;
- to develop awareness of the need for national integration, protection of environment, observance of small family norms, removal of social barriers, elimination of gender biases;
- to develop necessary skills to work with modern technological devices and mathematical softwares.
- to develop interest in mathematics as a problem-solving tool in various fields for its beautiful structures and patterns, etc.
- to develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics;
- to develop interest in the subject by participating in related competitions;
- to acquaint students with different aspects of Mathematics used in daily life;
- to develop an interest in students to study Mathematics as a discipline.

COURSE STRUCTURE CLASS -IX

Units	Unit Name	Marks
I	NUMBER SYSTEMS	08
II	ALGEBRA	17
III	COORDINATE GEOMETRY	04
IV	GEOMETRY	28
V	MENSURATION	13
VI	STATISTICS & PROBABILITY	10
	Total	**80**

UNIT I: NUMBER SYSTEMS

1. REAL NUMBERS (18 Periods)

1. Review of representation of natural numbers, integers, rational numbers on the number line. Representation of terminating / non-terminating recurring decimals on the number line through successive magnification. Rational numbers as recurring/ terminating decimals. Operations on real numbers.

2. Examples of non-recurring/non-terminating decimals. Existence of non-rational numbers (irrational numbers) such as $\sqrt{2}$, $\sqrt{3}$ and their representation on the number line. Explaining that every real number is represented by a unique point on the number line and conversely, viz. every point on the number line represents a unique real number.
3. Definition of nth root of a real number.
4. Existence of $\sqrt{x}$ for a given positive real number x and its representation on the number line with geometric proof.
5. Rationalization (with precise meaning) of real numbers of the type $\frac{1}{a+b\sqrt{x}}$ and $\frac{1}{\sqrt{x}+\sqrt{y}}$ (and their combinations) where x and y are natural number and a and b are integers.
6. Recall of laws of exponents with integral powers. Rational exponents with positive real bases (to be done by particular cases, allowing learner to arrive at the general laws.)

UNIT II: ALGEBRA

1. POLYNOMIALS (23) Periods

Definition of a polynomial in one variable, with examples and counter examples. Coefficients of a polynomial, terms of a polynomial and zero polynomial. Degree of a polynomial. Constant, linear, quadratic and cubic polynomials. Monomials, binomials, trinomials. Factors and multiples. Zeros of a polynomial. Motivate and State the Remainder Theorem with examples. Statement and proof of the Factor Theorem. Factorization of $ax^2 + bx + c$, $a \neq 0$ where a, b and c are real numbers, and of cubic polynomials using the Factor Theorem.

Recall of algebraic expressions and identities. Verification of identities:
$(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$
$(x \pm y)^3 = x^3 \pm y^3 \pm 3xy\,(x \pm y)$
$x^3 \pm y^3 = (x \pm y)\,(x^2 \mp xy + y^2$
$x^3 + y^3 + z^3 - 3xyz = (x + y + z)\,(x^2 + y^2 + z^2 - xy - yz - zx)$
and their use in factorization of polynomials.

2. LINEAR EQUATIONS IN TWO VARIABLES (14) Periods

Recall of linear equations in one variable. Introduction to the equation in two variables.

Focus on linear equations of the type $ax+by+c=0$. Prove that a linear equation in two variables has infinitely many solutions and justify their being written as ordered pairs of real numbers, plotting them and showing that they lie on a line. Graph of linear equations in two variables. Examples, problems from real life, including problems on Ratio and Proportion and with algebraic and graphical solutions being done simultaneously.

UNIT III: COORDINATE GEOMETRY

COORDINATE GEOMETRY (6) Periods

The Cartesian plane, coordinates of a point, names and terms associated with the coordinate plane, notations, plotting points in the plane.

UNIT IV: GEOMETRY

1. INTRODUCTION TO EUCLID'S GEOMETRY (6) Periods

History - Geometry in India and Euclid's geometry. Euclid's method of formalizing observed phenomenon into rigorous Mathematics with definitions, common/obvious notions, axioms/postulates and theorems. The five postulates of Euclid. Equivalent versions of the fifth postulate. Showing the relationship between axiom and theorem, for example:

(Axiom) 1. Given two distinct points, there exists one and only one line through them.
(Theorem) 2. (Prove) Two distinct lines cannot have more than one point in common.

2. LINES AND ANGLES (13) Periods

1. (Motivate) If a ray stands on a line, then the sum of the two adjacent angles so formed is 180^O and the converse.
2. (Prove) If two lines intersect, vertically opposite angles are equal.
3. (Motivate) Results on corresponding angles, alternate angles, interior angles when a transversal intersects two parallel lines.
4. (Motivate) Lines which are parallel to a given line are parallel.
5. (Prove) The sum of the angles of a triangle is 180^O.
6. (Motivate) If a side of a triangle is produced, the exterior angle so formed is equal to the sum of the two interior opposite angles.

3. TRIANGLES (20) Periods

1. (Motivate) Two triangles are congruent if any two sides and the included angle of one triangle is equal to any two sides and the included angle of the other triangle (SAS Congruence).
2. (Prove) Two triangles are congruent if any two angles and the included side of one triangle is equal to any two angles and the included side of the other triangle (ASA Congruence).
3. (Motivate) Two triangles are congruent if the three sides of one triangle are equal to three sides of the other triangle (SSS Congruence).
4. (Motivate) Two right triangles are congruent if the hypotenuse and a side of one triangle are equal (respectively) to the hypotenuse and a side of the other triangle. (RHS Congruence)
5. (Prove) The angles opposite to equal sides of a triangle are equal.

6. (Motivate) The sides opposite to equal angles of a triangle are equal.
7. (Motivate) Triangle inequalities and relation between 'angle and facing side' inequalities in triangles.

4. QUADRILATERALS (10) Periods

1. (Prove) The diagonal divides a parallelogram into two congruent triangles.
2. (Motivate) In a parallelogram opposite sides are equal, and conversely.
3. (Motivate) In a parallelogram opposite angles are equal, and conversely.
4. (Motivate) A quadrilateral is a parallelogram if a pair of its opposite sides is parallel and equal.
5. (Motivate) In a parallelogram, the diagonals bisect each other and conversely.
6. (Motivate) In a triangle, the line segment joining the mid points of any two sides is parallel to the third side and in half of it and (motivate) its converse.

5. AREA (7) Periods

Review concept of area, recall area of a rectangle.

1. (Prove) Parallelograms on the same base and between the same parallels have the same area.
2. (Motivate) Triangles on the same (or equal base) base and between the same parallels are equal in area.

6. CIRCLES (15) Periods

Through examples, arrive at definition of circle and related concepts-radius, circumference, diameter, chord, arc, secant, sector, segment, subtended angle.

1. (Prove) Equal chords of a circle subtend equal angles at the center and (motivate) its converse.
2. (Motivate) The perpendicular from the center of a circle to a chord bisects the chord and conversely, the line drawn through the center of a circle to bisect a chord is perpendicular to the chord.
3. (Motivate) There is one and only one circle passing through three given non-collinear points.
4. (Motivate) Equal chords of a circle (or of congruent circles) are equidistant from the center (or their respective centers) and conversely.
5. (Prove) The angle subtended by an arc at the center is double the angle subtended by it at any point on the remaining part of the circle.
6. (Motivate) Angles in the same segment of a circle are equal.
7. (Motivate) If a line segment joining two points subtends equal angle at two other points lying on the same side of the line containing the segment, the four points lie on a circle.
8. (Motivate) The sum of either of the pair of the opposite angles of a cyclic quadrilateral is 180° and its converse.

7. CONSTRUCTIONS (10) Periods

1. Construction of bisectors of line segments and angles of measure 60^o, 90^o, 45° etc., equilateral triangles.
2. Construction of a triangle given its base, sum/difference of the other two sides and one base angle.
3. Construction of a triangle of given perimeter and base angles.

UNIT V: MENSURATION

1. AREAS (4) Periods

Area of a triangle using Heron's formula (without proof) and its application in finding the area of a quadrilateral.

2. SURFACE AREAS AND VOLUMES (12) Periods

Surface areas and volumes of cubes, cuboids, spheres (including hemispheres) and right circular cylinders/cones.

UNIT VI: STATISTICS & PROBABILITY

1. STATISTICS (13) Periods

Introduction to Statistics: Collection of data, presentation of data — tabular form, ungrouped / grouped, bar graphs, histograms (with varying base lengths), frequency polygons. Mean, median and mode of ungrouped data.

2. PROBABILITY (9) Periods

History, Repeated experiments and observed frequency approach to probability.

Focus is on empirical probability. (A large amount of time to be devoted to group and to individual activities to motivate the concept; the experiments to be drawn from real - life situations, and from examples used in the chapter on statistics).

QUESTIONS PAPER DESIGN 2018-19
CLASS-IX

Mathematics (Code No. 041)						**Marks: 80**	
S. No.	**Typology of Questions**	**Very Short Answer (VSA) (1 Mark)**	**Short Answer-I (SA) (2 Marks)**	**Short Answer-II (SA) (3 Marks)**	**Long Answer (LA) (4 Marks)**	**Total Marks**	**% Weightage (approx.)**
1	**Remembering-(Knowledge based-** Simple recall questions, to know specific facts, terms, concepts, principles or theories; Identify, define, or recite, information)	2	2	2	2	20	25%
2	**Understanding-(Comprehension-** to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	2	1	1	4	23	29%
3	**Application (**Use abstract information in concrete situation, to apply knowledge to new situation; Use given content to interpret a situation, provide an example, or solve a problem)	2	2	3	1	19	24%
4	**Higher Order Thinking Skills (Analysis & Synthesis-** Classify, compare, contrast, or differentiate between different pieces of information; Organize and /or integrate unique pieces of information from variety of sources)	-	1	4	-	14	17%
5	**Evaluation (** Judge, and/or justify the value or worth of a decision or outcome, or to predict outcomes based on values)	-	-	-	1	4	5%
	Total	**6x1=6**	**6x2=12**	**10x3=30**	**8x4=32**	**80**	**100%**

INTERNAL ASSESSMENT **20 Marks**

- Periodical Test 10 Marks
- Note Book Submission 05 Marks
- Lab Practical (Lab activities to be done from the prescribed books) 05 Marks

COURSE STRUCTURE CLASS -X

Units	Unit Name	Marks
I	NUMBER SYSTEMS	06
II	ALGEBRA	20
III	COORDINATE GEOMETRY	06
IV	GEOMETRY	15
V	TRIGONOMETRY	12
VI	MENSURATION	10
VII	STATISTICS & PROBABILTY	11
	Total	**80**

UNIT I: NUMBER SYSTEMS

1. REAL NUMBER (15) Periods

Euclid's division lemma, Fundamental Theorem of Arithmetic - statements after reviewing work done earlier and after illustrating and motivating through examples, Proofs of irrationality of $\sqrt{2}$, $\sqrt{3}$ $\sqrt{5}$ Decimal representation of rational numbers in terms of terminating/non-terminating recurring decimals.

UNIT II: ALGEBRA

1. POLYNOMIALS (7) Periods

Zeros of a polynomial. Relationship between zeros and coefficients of quadratic polynomials. Statement and simple problems on division algorithm for polynomials with real coefficients.

2. PAIR OF LINEAR EQUATIONS IN TWO VARIABLES (15) Periods

Pair of linear equations in two variables and graphical method of their solution, consistency/inconsistency.

Algebraic conditions for number of solutions. Solution of a pair of linear equations in two variables algebraically - by substitution, by elimination and by cross multiplication method. Simple situational problems. Simple problems on equations reducible to linear equations.

3. QUADRATIC EQUATIONS (15) Periods

Standard form of a quadratic equation $ax^2 + bx + c = 0, (a \neq 0)$. Solutions of quadratic equations (only real roots) by factorization, by completing the square and by using quadratic formula. Relationship between discriminant and nature of roots.

Situational problems based on quadratic equations related to day to day activities to be incorporated.

4. ARITHMETIC PROGRESSIONS (8) Periods

Motivation for studying Arithmetic Progression Derivation of the n^{th} term and sum of the first n terms of A.P. and their application in solving daily life problems.

UNIT III: COORDINATE GEOMETRY

1. LINES (In two-dimensions) (14) Periods

Review: Concepts of coordinate geometry, graphs of linear equations. Distance formula. Section formula (internal division). Area of a triangle.

UNIT IV: GEOMETRY

1. TRIANGLES (15) Periods

Definitions, examples, counter examples of similar triangles.

1. (Prove) If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, the other two sides are divided in the same ratio.
2. (Motivate) If a line divides two sides of a triangle in the same ratio, the line is parallel to the third side.
3. (Motivate) If in two triangles, the corresponding angles are equal, their corresponding sides are proportional and the triangles are similar.
4. (Motivate) If the corresponding sides of two triangles are proportional, their corresponding angles are equal and the two triangles are similar.
5. (Motivate) If one angle of a triangle is equal to one angle of another triangle and the sides including these angles are proportional, the two triangles are similar.
6. (Motivate) If a perpendicular is drawn from the vertex of the right angle of a right triangle to the hypotenuse, the triangles on each side of the perpendicular are similar to the whole triangle and to each other.
7. (Prove) The ratio of the areas of two similar triangles is equal to the ratio of the squares of their corresponding sides.
8. (Prove) In a right triangle, the square on the hypotenuse is equal to the sum of the squares on the other two sides.
9. (Prove) In a triangle, if the square on one side is equal to sum of the squares on the other two sides, the angles opposite to the first side is a right angle.

2. CIRCLES (8) Periods

Tangent to a circle at, point of contact

1. (Prove) The tangent at any point of a circle is perpendicular to the radius through the point of contact.
2. (Prove) The lengths of tangents drawn from an external point to a circle are equal.

3. CONSTRUCTIONS (8) Periods

1. Division of a line segment in a given ratio (internally).
2. Tangents to a circle from a point outside it.
3. Construction of a triangle similar to a given triangle.

UNIT V: TRIGONOMETRY

1. INTRODUCTION TO TRIGONOMETRY (10) Periods

Trigonometric ratios of an acute angle of a right-angled triangle. Proof of their existence (well defined); motivate the ratios whichever are defined at 0° and 90°. Values (with proofs) of the trigonometric ratios of 30^0, 45^0 and 60^0. Relationships between the ratios.

2. TRIGONOMETRIC IDENTITIES (15) Periods

Proof and applications of the identity $\sin^2 A + \cos^2 A = 1$. Only simple identities to be given. Trigonometric ratios of complementary angles.

3. HEIGHTS AND DISTANCES: Angle of elevation, Angle of Depression. (8) Periods

Simple problems on heights and distances. Problems should not involve more than two right triangles. Angles of elevation / depression should be only 30°, 45°, 60°.

UNIT VI: MENSURATION

1. AREAS RELATED TO CIRCLES (12) Periods

Motivate the area of a circle; area of sectors and segments of a circle. Problems based on areas and perimeter / circumference of the above said plane figures. (In calculating area of segment of a circle, problems should be restricted to central angle of 60°, 90° and 120° only. Plane figures involving triangles, simple quadrilaterals and circle should be taken.)

2. SURFACE AREAS AND VOLUMES (12) Periods

1. Surface areas and volumes of combinations of any two of the following: cubes, cuboids, spheres, hemispheres and right circular cylinders/cones. Frustum of a cone.
2. Problems involving converting one type of metallic solid into another and other mixed problems. (Problems with combination of not more than two different solids be taken).

UNIT VII: STATISTICS AND PROBABILITY

1. STATISTICS (18) Periods

Mean, median and mode of grouped data (bimodal situation to be avoided). Cumulative frequency graph.

2. PROBABILITY (10) Periods

Classical definition of probability. Simple problems on single events (not using set notation).

QUESTIONS PAPER DESIGN 2018-19
CLASS-X

Mathematics (Code No. 041)						**Marks: 80**	
S. No.	**Typology of Questions**	**Very Short Answer (VSA) (1 Mark)**	**Short Answer-I (SA) (2 Marks)**	**Short Answer-II (SA) (3 Marks)**	**Long Answer (LA) (4 Marks)**	**Total Marks**	**% Weightage (approx.)**
1	**Remembering-(Knowledge based-** Simple recall questions, to know specific facts, terms, concepts, principles or theories; Identify, define, or recite, information)	2	2	2	2	20	25%
2	**Understanding-(Comprehension-** to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	2	1	1	4	23	29%
3	**Application (**Use abstract information in concrete situation, to apply knowledge to new situation; Use given content to interpret a situation, provide an example, or solve a problem)	2	2	3	1	19	24%
4	**Higher Order Thinking Skills (Analysis & Synthesis-** Classify, compare, contrast, or differentiate between different pieces of information; Organize and /or integrate unique pieces of information from variety of sources)	-	1	4	-	14	17%
5	**Evaluation (** Judge, and/or justify the value or worth of a decision or outcome, or to predict outcomes based on values)	-	-	-	1	4	5%
	Total	**6x1=6**	**6x2=12**	**10x3=30**	**8x4=32**	**80**	**100%**

INTERNAL ASSESSMENT **20 Marks**

- Periodical Test 10 Marks
- Note Book Submission 05 Marks
- Lab Practical (Lab activities to be done from the prescribed books) 05 Marks

PRESCRIBED BOOKS:

1. Mathematics - Textbook for class IX - NCERT Publication
2. Mathematics - Textbook for class X - NCERT Publication
3. Guidelines for Mathematics Laboratory in Schools, class IX - CBSE Publication
4. Guidelines for Mathematics Laboratory in Schools, class X - CBSE Publication
5. Laboratory Manual - Mathematics, secondary stage - NCERT Publication
6. Mathematics exemplar problems for class IX, NCERT publication.
7. Mathematics exemplar problems for class X, NCERT publication.

SCIENCE
(Code No. 086 / 090)

The subject of Science plays an important role in developing well-defined abilities in cognitive, affective and psychomotor domains in children. It augments the spirit of enquiry, creativity, objectivity and aesthetic sensibility.

Upper primary stage demands that a number of opportunities should be provided to the students to engage them with the processes of Science like observing, recording observations, drawing, tabulation, plotting graphs, etc., whereas the secondary stage also expects abstraction and quantitative reasoning to occupy a more central place in the teaching and learning of Science. Thus, the idea of atoms and molecules being the building blocks of matter makes its appearance, as does Newton's law of gravitation.

The present syllabus has been designed around seven broad themes viz. Food; Materials; The World of The Living; How Things Work; Moving Things, People and Ideas; Natural Phenomenon and Natural Resources. Special care has been taken to avoid temptation of adding too many concepts than can be comfortably learnt in the given time frame. No attempt has been made to be comprehensive.

At this stage, while science is still a common subject, the disciplines of Physics, Chemistry and Biology begin to emerge. The students should be exposed to experiences based on hands on activities as well as modes of reasoning that are typical of the subject.

General Instructions:

1. There will be an Annual examination based on entire syllabus.
2. The annual examination will be of 80 marks and 20 marks weightage shall be for internal assessment.
3. Out of 80 marks annual examination 68 marks weightage shall be for theory and 12 marks weightage shall be for practical based questions.
4. For internal assessment

a. There will be three periodic tests conducted by the school. Average of the best two tests to be taken that will have a weightage of 10 marks towards the final result.

b. Practical / Laboratory work should be done throughout the year and the student should maintain record of the same. Practical Assessment should be continuous. There will be weightage of 5 marks towards the final result. All practicals listed in the syllabus must be completed.

c. Regularity, class work and home assignment completion along with neatness and upkeep of notebook will carry a weightage of 5 marks towards the final results.

COURSE STRUCTURE CLASS IX

(Annual Examination) **Marks: 80**

Unit No.	Unit	Marks
I	Matter – Its Nature and Behaviour	**23**
II	Organisation in the Living World	**20**
III	Motion, Force and Work	**27**
IV	Our Environment	**06**
V	Food; Food Production	**04**
	Total	**80**
	Internal assessment	**20**
	Grand Total	**100**

Note: Above weightage includes the weightage of questions based on practical skills.

Theme: Materials **(50 Periods)**

Unit I: Matter-Nature and Behaviour

Definition of matter; solid, liquid and gas; characteristics - shape, volume, density; change of state-melting (absorption of heat), freezing, evaporation (cooling by evaporation), condensation, sublimation.

Nature of matter: Elements, compounds and mixtures. Heterogeneous and homogenous mixtures, colloids and suspensions.

Particle nature, basic units: Atoms and molecules, Law of constant proportions, Atomic and molecular masses. Mole concept: Relationship of mole to mass of the particles and numbers.

Structure of atoms: Electrons, protons and neutrons, valency, chemical formula of common compounds. Isotopes and Isobars.

Theme: The World of the Living **(45 Periods)**

Unit II: Organization in the Living World

Cell - Basic Unit of life : Cell as a basic unit of life; prokaryotic and eukaryotic cells, multicellular organisms; cell membrane and cell wall, cell organelles and cell inclusions; chloroplast, mitochondria, vacuoles, endoplasmic reticulum, Golgi apparatus; nucleus, chromosomes - basic structure, number.

Tissues, Organs, Organ System, Organism:

Structure and functions of animal and plant tissues (only four types of tissues in animals; Meristematic and Permanent tissues in plants).

Biological Diversity: Diversity of plants and animals - basic issues in scientific naming, basis of classification. Hierarchy of categories / groups, Major groups of plants (salient features) (Bacteria, Thallophyta, Bryophyta, Pteridophyta, Gymnosperms and Angiosperms). Major groups of animals (salient features) (Non-chordates upto phyla and chordates upto classes).

Health and Diseases: Health and its failure. Infectious and Non-infectious diseases, their causes and manifestation. Diseases caused by microbes (Virus, Bacteria and Protozoans) and their prevention; Principles of treatment and prevention. Pulse Polio programmes.

Theme: Moving Things, People and Ideas **(60 Periods)**

Unit III: Motion, Force and Work

Motion: Distance and displacement, velocity; uniform and non-uniform motion along a straight line; acceleration, distance-time and velocity-time graphs for uniform motion and uniformly accelerated motion, derivation of equations of motion by graphical method; elementary idea of uniform circular motion.

Force and Newton's laws : Force and Motion, Newton's Laws of Motion, Action and Reaction forces, Inertia of a body, Inertia and mass, Momentum, Force and Acceleration. Elementary idea of conservation of Momentum.

Gravitation: Gravitation; Universal Law of Gravitation, Force of Gravitation of the earth (gravity), Acceleration due to Gravity; Mass and Weight; Free fall.

Floatation: Thrust and Pressure. Archimedes' Principle; Buoyancy; Elementary idea of Relative Density.

Work, energy and power: Work done by a Force, Energy, power; Kinetic and Potential energy; Law of conservation of energy.

Sound: Nature of sound and its propagation in various media, speed of sound, range of hearing in humans; ultrasound; reflection of sound; echo and SONAR. Structure of the Human Ear (Auditory aspect only).

Theme: Natural Resources: Balance in nature **(15 Periods)**

Unit IV: Our Environment

Physical resources : Air, Water, Soil. Air for respiration, for combustion, for moderating temperatures; movements of air and its role in bringing rains across India.

Air, water and soil pollution (brief introduction). Holes in ozone layer and the probable damages.

Bio-geo chemical cycles in nature: Water, Oxygen, Carbon and Nitrogen.

Theme: Food **(10 Periods)**

Unit V: Food Production

Plant and animal breeding and selection for quality improvement and management; Use of fertilizers and manures; Protection from pests and diseases; Organic farming.

PRACTICALS

(30 Periods)

Practicals should be conducted alongside the concepts tough in theory classes.

(LIST OF EXPERIMENTS)

1. Preparation of :
   a) a true solution of common salt, sugar and alum
   b) a suspension of soil, chalk powder and fine sand in water
   c) a colloidal solution of starch in water and egg albumin/milk in water and distinguish between these on the basis of
      - transparency
      - filtration criterion
      - stability
2. Preparation of
   a) a mixture
   b) a compound

   using iron filings and sulphur powder and distinguishing between these on the basis of:
   (i) appearance, i.e., homogeneity and heterogeneity
   (ii) behaviour towards a magnet
   (iii) behaviour towards carbon disulphide as a solvent
   (iv) effect of heat
3. Separation of the components of a mixture of sand, common salt and ammonium chloride (or camphor).
4. Perform the following reactions and classify them as physical or chemical changes :
   a) Iron with copper sulphate solution in water

b) Burning of magnesium ribbon in air

c) Zinc with dilute sulphuric acid

d) Heating of copper sulphate crystals

e) Sodium sulphate with barium chloride in the form of their solutions in water

5. Preparation of stained temporary mounts of (a) onion peel, (b) human cheek cells & to record observations and draw their labeled diagrams.
6. Identification of Parenchyma, collenchyma and Sclerenchyma tissues in plants, striped, smooth and cardiac muscle fibers and nerve cells in animals, from prepared slides. Draw their labeled diagrams.
7. Determination of the melting point of ice and the boiling point of water.
8. Verification of the Laws of reflection of sound.
9. Determination of the density of solid (denser than water) by using a spring balance and a measuring cylinder.
10. Establishing the relation between the loss in weight of a solid when fully immersed in

    a) tap water

    b) strongly salty water, with the weight of water displaced by it by taking at least two different solids.
11. Determination of the speed of a pulse propagated through a stretched string/slinky(helical spring).
12. Study of the characteristics of *Spirogyra, Agaricus*, Moss, Fern, Pinus (either with male or female cone) and an Angiospermic plant. Draw and give two identifying features of the groups they belong to.
13. Observe the given pictures/charts/models of earthworm, cockroach, bony fish and bird. For each organism, draw their picture and record:

    a) one specific feature of its phylum.

    b) one adaptive feature with reference to its habitat.
14. Verification of the law of conservation of mass in a chemical reaction.
15. Study of the external features of root, stem, leaf and flower of monocot and dicot plants.

COURSE STRUCTUR CLASS X

(Annual Examination)

Marks: 80

Unit No.	Unit	Marks
I	Chemical Substances-Nature and Behaviour	25
II	World of Living	23
III	Natural Phenomena	12
IV	Effects of Current	13
V	Natural Resources	07
	Total	80
	Internal assessment	20
	Grand Total	100

Note: Above weightage includes the weightage of questions based on practical skills.

Theme: Materials **(55 Periods)**

Unit I: Chemical Substances - Nature and Behaviour

Chemical reactions: Chemical equation, Balanced chemical equation, implications of a balanced chemical equation, types of chemical reactions: combination, decomposition, displacement, double displacement, precipitation, neutralization, oxidation and reduction.

Acids, bases and salts: Their definitions in terms of furnishing of H^+ and OH^- ions, General properties, examples and uses, concept of pH scale (Definition relating to logarithm not required), importance of pH in everyday life; preparation and uses of Sodium Hydroxide, Bleaching powder, Baking soda, Washing soda and Plaster of Paris.

Metals and nonmetals: Properties of metals and non-metals; Reactivity series; Formation and properties of ionic compounds; Basic metallurgical processes; Corrosion and its prevention.

Carbon compounds: Covalent bonding in carbon compounds. Versatile nature of carbon. Homologous series. Nomenclature of carbon compounds containing functional groups (halogens, alcohol, ketones, aldehydes, alkanes and alkynes), difference between saturated hydrocarbons and unsaturated hydrocarbons. Chemical properties of carbon compounds (combustion, oxidation, addition and substitution reaction). Ethanol and Ethanoic acid (only properties and uses), soaps and detergents.

Periodic classification of elements: Need for classification, Early attempts at classification of elements (Dobereiner's Triads, Newland's Law of Octaves,

Mendeleev's Periodic Table), Modern periodic table, gradation in properties, valency, atomic number, metallic and non-metallic properties.

Theme: The World of the Living **(50 Periods)**

Unit II: World of Living

Life processes: 'Living Being'. Basic concept of nutrition, respiration, transport and excretion in plants and animals.

Control and co-ordination in animals and plants: Tropic movements in plants; Introduction of plant hormones; Control and co-ordination in animals: Nervous system; Voluntary, involuntary and reflex action; Chemical co-ordination: animal hormones.

Reproduction: Reproduction in animals and plants (asexual and sexual) reproductive health-need and methods of family planning. Safe sex vs HIV/AIDS. Child bearing and women's health.

Heredity and Evolution: Heredity; Mendel's contribution- Laws for inheritance of traits: Sex determination: brief introduction; Basic concepts of evolution.

Theme: Natural Phenomena **(23 Periods)**

Unit III: Natural Phenomena

Reflection of light by curved surfaces; Images formed by spherical mirrors, centre of curvature, principal axis, principal focus, focal length, mirror formula (Derivation not required), magnification.

Refraction; Laws of refraction, refractive index.

Refraction of light by spherical lens; Image formed by spherical lenses; Lens formula (Derivation not required); Magnification. Power of a lens.

Functioning of a lens in human eye, defects of vision and their corrections, applications of spherical mirrors and lenses.

Refraction of light through a prism, dispersion of light, scattering of light, applications in daily life.

Theme: How Things Work **(32 Periods)**

Unit IV: Effects of Current

Electric current, potential difference and electric current. Ohm's law; Resistance, Resistivity, Factors on which the resistance of a conductor depends. Series combination of resistors, parallel combination of resistors and its applications in daily life. Heating effect of electric current and its applications in daily life. Electric power, Interrelation between P, V, I and R.

Magnetic effects of current : Magnetic field, field lines, field due to a current carrying conductor, field due to current carrying coil or solenoid; Force on current carrying conductor, Fleming's Left Hand Rule, Electric Motor, Electromagnetic induction. Induced potential difference, Induced current. Fleming's Right Hand Rule, Electric Generator, Direct current. Alternating current : frequency of AC. Advantage of AC over DC. Domestic electric circuits.

Theme: Natural Resources **(20 Periods)**

Unit V: Natural Resources

Sources of energy: Different forms of energy, conventional and non-conventional sources of energy: Fossil fuels, solar energy; biogas; wind, water and tidal energy; Nuclear energy. Renewable versus non-renewable sources of Energy.

Our environment: Eco-system, Environmental problems, Ozone depletion, waste production and their solutions. Biodegradable and non-biodegradable substances.

Management of natural resources: Conservation and judicious use of natural resources. Forest and wild life; Coal and Petroleum conservation. Examples of people's participation for conservation of natural resources. Big dams: advantages and limitations; alternatives, if any. Water harvesting. Sustainability of natural resources.

PRACTICALS

Practical should be conducted alongside the concepts taught in theory classes

LIST OF EXPERIMENTS

1. A. Finding the pH of the following samples by using pH paper/universal indicator:

   (i) Dilute Hydrochloric Acid
   (ii) Dilute NaOH solution
   (iii) Dilute Ethanoic Acid solution
   (iv) Lemon juice
   (v) Water
   (vi) Dilute Hydrogen Carbonate solution

   B. Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with:

   a) Litmus solution (Blue/Red)
   b) Zinc metal
   c) Solid sodium carbonate

2. Performing and observing the following reactions and classifying them into:

A. Combination reaction
B. Decomposition reaction
C. Displacement reaction
D. Double displacement reaction

(i) Action of water on quick lime
(ii) Action of heat on ferrous sulphate crystals
(iii) Iron nails kept in copper sulphate solution
(iv) Reaction between sodium sulphate and barium chloride solutions

3. Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions:
   i) $ZnSO_4$ (aq)
   ii) $FeSO_4$ (aq)
   iii) $CuSO_4$ (aq)
   iv) $Al_2 (SO_4)_3$ (aq)

   Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above result.

4. Studying the dependence of potential difference (V) across a resistor on the current (I) passing through it and determine its resistance. Also plotting a graph between V and I.

5. Determination of the equivalent resistance of two resistors when connected in series and parallel.

6. Preparing a temporary mount of a leaf peel to show stomata.

7 Experimentally show that carbon dioxide is given out during respiration.

8 Study of the following properties of acetic acid (ethanoic acid):
   i) odour
   ii) solubility in water
   iii) effect on litmus
   iv) reaction with Sodium Hydrogen Carbonate

9 Study of the comparative cleaning capacity of a sample of soap in soft and hard water.

10 Determination of the focal length of:
   i) Concave mirror
   ii) Convex lens

   by obtaining the image of a distant object.

11 Tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. Measure the angle of incidence, angle of refraction, angle of emergence and interpret the result.

12 Studying (a) binary fission in *Amoeba,* and (b) budding in yeast and Hydra with the help of prepared slides.

13 Tracing the path of the rays of light through a glass prism.

14 Finding the image distance for varying object distances in case of a convex lens and drawing corresponding ray diagrams to show the nature of image formed.

15 Identification of the different parts of an embryo of a dicot seed (Pea, gram or red kidney bean).

PRESCRIBED BOOKS:

- Science - Textbook for class IX - NCERT Publication
- Science - Textbook for class X - NCERT Publication
- Assessment of Practical Skills in Science - Class IX - CBSE Publication
- Assessment of Practical Skills in Science - Class X - CBSE Publication
- Laboratory Manual - Science - Class IX , NCERT Publication
- Laboratory Manual - Science - Class X, NCERT Publication
- Exemplar Problems Class IX - NCERT Publication
- Exemplar Problems Class X - NCERT Publication

Class- IX & X (2018-19)

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

S. No.	Typology of Questions	Very Short Answer (VSA) 1 Mark	Short Answer -I (SAI) 2 Marks	Short Answer -II (SAII) 3 Marks	Long Answer (LA) 5 Marks	Total Marks	% Weightage
1	**Remembering** (Knowledge based simple recall questions, to know specific facts, terms, concepts, principles, or theories, Identify, define or recite, information)	2	-	1	1	10	15%
2	**Understanding** (Comprehension - to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	-	1	4	2	24	35%
3	**Application** (Use abstract information in concrete situation, to apply knowledge to new situations, use given content to interpret a situation, provide an example, or solve a problem)	-	1	2	2	18	26%
4	**High Order Thinking Skills** (Analysis & Synthesis - Classify, compare, contrast, or differentiate between different pieces of information, Organize and/or integrate unique pieces of information from a variety of sources)	-	-	1	1	8	12%
5	**Inferential and Evaluative** (Appraise, judge, and/or justify the value or worth of a decision or outcome, or to predict outcomes based on values)	-	1	2	-	8	12%
	Total (Theory Based Questions)	**2x1=2**	**3x2=6**	**10x3=30**	**6x5=30**	**68(21)**	**100%**
	Practical Based Questions (PBQs)		**6x2=12**	-	-	**12(6)**	
	Total	**2x1=2**	**9x2=18**	**10x3=30**	**6x5=30**	**80(27)**	

1. Question paper will consist of 27 questions.
2. All questions would be compulsory. However, an internal choice will be provided in three questions of 3 marks each, two questions of 5 marks each and one question (for assessing the practical skills) of 2 marks.