

**ODISHA STAFF SELECTION COMMISSION**

Unit – II, Bhubaneswar – 751001

Advertisement No.IIE-166/2022- 6630 /OSSC; Date: . 14-11-2022 .

Recruitment to the posts of Planning Assistant under Director of Municipal Administration, H & UD Department,  
Odisha, Bhubaneswar  
(POST CODE: 270)  
(WEBSITE: [www.osscc.gov.in](http://www.osscc.gov.in))

**1. Application Invited:**

	Start Date	End Date
Online Registration	16.11.2022	15.12.2022
Submission of Online Application Form	16.11.2022	15.12.2022
Mode of Application	Online Mode only through the website " <a href="http://www.osscc.gov.in">www.osscc.gov.in</a> ". No Physical copy/Hard copy of the Online Application Form needs to be submitted by the applicant.	

- a. Applications are invited online through the OSSC website "[www.osscc.gov.in](http://www.osscc.gov.in)" from candidates for recruitment to fill up vacancies in the post of Planning Assistant under **Director of Municipal Administration, H & UD Department, Odisha, Bhubaneswar**

Sl. N	Name of the Post/Service	Name of the Department in which vacancy exists for this recruitment	Total No. of vacancy	Classification of Posts	Level of Pay
1	Planning Assistant	Director, Municipal Administration, Housing & Urban Development Department	15	Group-B	Level-9 Rs.35,400-1,12,400

- b. Candidates must possess a valid e-Mail Id and Mobile number while applying for the post and keep the same active till the completion of this recruitment process, to receive important messages from the Commission.
- c. The prescribed age limit for the post is 21 years to 38 years as on 01.01.2022 with usual age relaxation for SC,ST, SEBC, Women, PwD, Ex-Serviceman.
- d. The examination fee has been exempted for all categories of candidates as per GA & PG Department Notification No.9897/Gen dated 11.04.2022.
- e. There shall be regular appointments carrying level of Pay as mentioned above. Appointment shall be guided by "Odisha Group-B (Repeal and Special Provisions) Rules, 2022 notified vide GA and PG Department Notification number 2946 dated 16<sup>th</sup> October2022, and Odisha

Municipal Planning Service (Method of recruitment and conditions of service) Rules-2017 notified H&UD S.R.O. No.500/2017 dated 16<sup>th</sup> October 2017.

- f. Candidates should ensure that they fulfil all the eligibility criteria prescribed for the post as laid down in the advertisement. Admission of a candidate to the written examination & other tests shall be provisional and on the basis of information furnished by her/him in the Online Application Form.
- g. Online applications submitted to OSSC found to be incomplete in any respect are liable for rejection without entertaining any correspondence with the applicants on that matter.
- h. If at any stage of recruitment or thereafter, it is found that any information furnished by the candidate in her/his Online Application Form is false/incorrect or the candidate has suppressed any relevant information or the candidate otherwise does not satisfy the eligibility criteria prescribed for the post, her/his candidature for the posts shall be cancelled. She/ He may further be debarred either temporarily or permanently from the recruitment examination(s) conducted by the Commission.
- i. No Admission Letter for recruitment at any stage shall be sent to candidates by post. The candidates are therefore advised to access Commission's website [www.oss.gov.in](http://www.oss.gov.in) regularly to know updates regarding the date of examination, downloading of Admission Letter and the status of their applications etc.
- j. The candidates are advised to submit the Online Application Form well in advance without waiting for the closing date to avoid the last-hour rush.

**Important instructions to candidates about filling up of Online Application and "How to Apply" is enclosed as Annexure-A to this advertisement.**

**2. a) Category-wise break -up of vacancy positions along with reservation thereof:**

SL. No.	Name of Post	Category wise Vacancy					Special Category Vacancy		
		UR (Out of which women)	SEBC (Out of which women)	SC (Out of which women)	ST (Out of which women)	Total (Out of which women)	PwD	Ex-SM	Sports Person
9	Planning Assistant	08 (w-03)	02 (w-01)	02 (w-01)	03 (w-01)	15 (w-06)	01	Nil	Nil

UR-Unreserved

SEBC-Socially and Educationally Backward Class

SC-Scheduled Caste

ST-Scheduled Tribe

**N.B:- Candidates belonging to the Transgender community are also eligible to apply**

- b) As per the Social Security & Empowerment of Persons with Disabilities Department, Govt. of Odisha Resolution No.1843/SSEPD Dtd.25.02.2021 the PwD candidates having disability of permanent nature not below 40% in the following categories and Benchmark disability & Functional Requirements shall be eligible to apply for the post.

Sl No	Name of Post	Benchmark Disabilities prescribed for the post	Functional Classification	Physical Requirements to perform the work
9	Planning Assistant	Category-II-01 Total-01	Category-II -HI- Hard of Hearing with suitable Aid	B-Work performed by Bending MF- Work Performed by Manipulating (with fingers) H-Work Performed by Hearing/Speaking R&W- Work performed by Reading and Writing SE- Work Performed by Seeing ST- Work Performed by standing

- c) PwD candidates must ensure that they possess permanent disability certificate of the above category as at clause 2(b) and must upload the scanned copy of the original disability certificate issued online (not photocopy) UDID card issued by competent authority.
- d) In case of non-availability of eligible/suitable Women candidates belonging to the respective categories the unfilled vacancies of that category shall be filled up by eligible or suitable male candidate(s) of the same category.
- e) The number of vacancies and reservation of Vacancies to be filled up on the basis of this recruitment are subject to change without any prior notice as per the discretion of the Commission, the Requisitioning Authorities and the Government.

**3. Eligibility:**

**(a) General criteria of eligibility: -**

Candidates applying for the above post should be

- a citizen of India,
- of good character,
- of sound health, good physique and free from organic defects or bodily infirmity
- If married, must not have more than one spouse living
- Must be able to read, write and speak Odia fluently and:-
  - i. Must have passed Middle School Examination with Odia as language subject, or
  - ii. Must have passed HSC Examination or equivalent examination with Odia as Medium of examination in non-language subject, or



- iii. Must have passed in Odia as language subject in the final examination of Class-VII or above from a school or educational institution recognised by the Govt. of Odisha or the Central Govt., or
- iv. Must have passed a test in Odia in Middle English School standard conducted by the School and Mass Education Department, Govt. of Odisha.

**(b) Minimum Educational Qualification:**

The candidate must have possessed Diploma in Architecture from an Institution recognized by the Govt. He/She must have practical knowledge of GIS application with CADD or any other Drafting and Designing Computer Software and basic computer knowledge.

**(c) Age:**

- i. To be eligible for the post a candidate must have attained the age of (Twenty-one) 21 years and must not be above the age of (Thirty-eight) 38 years as on **1<sup>st</sup> January 2022**. The upper age limit is relaxable by 5 years for candidates belonging to SEBC, SC, ST & all Women candidates, 10 years for candidates belonging to PwD category & the total period of service rendered in defence service in case of Ex-servicemen. PwD candidates in the ST & SC category shall be entitled to cumulative age relaxation of ten years over & above the normal relaxation specified for the category. However, a candidate who comes under more than one category shall be eligible for only one benefit of age relaxation as per rule which will be more beneficial to her/him. To be eligible, candidates not enjoying any relaxation of upper age limit, must not have been born earlier than **2<sup>nd</sup> January, 1984** and not later than **1<sup>st</sup> January 2001**.
- ii. The persons in Defence Forces who are to retire within six months from the last date of Online Application form are eligible to apply on obtaining NOC from the Appropriate Authority indicating there in the date of enrolment and expected date of discharge and year of service rendered in Defence Forces. They should note that they must submit the discharge certificate on the date of certificate verification for considering their claims of age relaxation under Ex-Serviceman category

(NOTE: Border Security Force, Indian Coast Guard, CRPF and other Para Military Forces are not within the definition of Ex-Servicemen.)

- (d) Date of Birth entered in the High School Certificate Examination by the Board of Secondary Education, Odisha or equivalent Certificate issued by the recognised Board/Council/ by an Indian University as equivalent there to shall be acceptable by the Commission.



(e) A candidate who claims change in her/his name after having passed the High School Certificate Examination is required to furnish copy of publication of the changed name in local leading daily newspaper as well as copy of notification in the Odisha Gazette in support of her/his change of name.

[For important instructions about filling up online application and “How to Apply” refer Annexure “A’ enclosed].

**4. Plan and pattern of Examination:**

- (a) There shall be two stages of examination  
 (i) Main Written Examination  
 (ii) Certificate verification

Stages of Examination	Type of Examination	Name of Paper	Marks allotted	Duration Of Examination	Remarks
Stage-I	Main Written Examination (to be held in Pen & Paper)	Paper-I	100	02 hours	Both Papers of Main Written examination shall be conducted in pen and paper. Most of the questions in Paper-I and Paper-II will be of objective type and short answer type.
		Paper-II	100	02 hours	
Stage-II	Certificate verification		--		Candidates up to 2(two) times the vacancies advertised in each category in order of merit basing on sum total of marks in Paper-I & Paper-II of Main Written Examination shall be shortlisted for the verification of original documents. The candidate, who fails to attend the document verification, will not be considered for the post.
Total			200 Marks		

**Note:-The detail syllabus of Main written examination is enclosed at Annexure-C.**

In pursuance of GA & PG Department Notification No-29246, Dated-18<sup>th</sup> October 2022, the Main Examination, shall be conducted both in Odia and English. The candidate shall exercise his/her

option in the online application form. **All may note that the option once given cannot be changed. Options are available in the online application form.**

- (b) The candidates those who fail to appear in any stage of the recruitment process will not be considered for final selection and their names will be deleted from the merit list.
- (c) Any complaint on the conduct of examination must be sent to the commission by email "[support.osscc@gov.in](mailto:support.osscc@gov.in)" within 05(five) days of completion of examination.

**5) Place and Date of written examination:**

- a) Tentative date for Main Written examination will be in January/February-2023. The Date of Main Examination will be conveyed in due course through Notice and/or Admission Letter.
- b) The exact Date, Time and Venue of Main written examination will be conveyed to the candidates in the Admission Letter(s) in due course. The Admission Letters can be downloaded by the eligible candidates by accessing the Commission's website from time to time.

**6) Certificate verification and submission of Detailed Application Form (DAF):**

Candidates numbering two times of the vacancies advertised in order of merit, Category-wise shall be shortlisted for Certificate Verification basing on the marks secured in the Main Written Examination.

The candidates will be required to produce their Original Academic Certificates, Mark sheets, caste certificate, special category certificate and other documents as intimated in the admission letter for verification along with a set of self-attested photocopy of the same and OSSC copy of the application form duly signed by the applicant. **(Details is enclosed in Annexure-B).**

**Candidates those who fail to appear for document verification will not be considered for final selection.**

**7) Admission Letter:**

- a) The Commission shall upload the admission letter in its Website [www.osscc.gov.in](http://www.osscc.gov.in) for the convenience of the candidates. Applicants should click on the button 'candidates' login' and then provide 'user Id' and 'Password' upon which the status of the application will be displayed on the screen. The eligible applicant may click on "Download Admission Letter" to download the Admission Letter and take print out.



- b) Admission of a candidate for the written examination & other tests shall be provisional and shall be on the basis of the information furnished by her / him in the online application form.
- c) The admitted candidates will have to produce the print out of the admission letter at the venue allotted for appearing in the examination / test.
- d) The admission letter contains issue date, time and venue of the examination, and bears the photo and signature of the candidate and facsimile signature of the Secretary of Commission.

**8) Select list:**

The Merit list shall be prepared basing on the sum total of marks secured by candidates in Paper-I and Paper-II (out of 200 marks) of the Main Written Examination and found suitable in Certificate Verification. The Select list shall be prepared category wise from the said Merit list equal to number of vacancies advertised and will be forwarded to Govt. for approval. On such approval of Govt. the Commission will publish the result.

**9) Action against candidates found guilty of misconduct / malpractice:**

- (a) If a candidate is found to indulge at any stage in any of the malpractices / misconduct listed below, before during or after conduct of examination, his/her candidature for this examination will be cancelled and they will be debarred from the examinations of the Commission for a specified period or permanently.
- Taking away any Examination related material such as OMR sheets/Question-cum-Answer Booklets, Rough Sheets, Answer Sheet etc. from the examination hall or passing it on to unauthorized persons during the conduct of examination.
  - Leaving the Examination Venue uninformed during the Examination
  - Misbehaving, intimidating or threatening in any manner the examination functionaries' i.e. Supervisor, Invigilator, Security Guard or Commission's representatives etc.
  - Obstruct the conduct of examination/ instigate other candidates not to take the examination.
  - Making statements which are incorrect or false, suppressing material information, submitting fabricated documents, etc.
  - Obtaining support/ influence for his candidature by any irregular or improper means.
  - Possession of Mobile Phone in either 'switched on' or 'switched off' mode.
  - Appearing in the same examination more than once in contravention of the rules.
  - A candidate who is working on examination related matters in the same examination.
  - Damaging examination related infrastructure/ equipment.



- Appearing in the Exam with forged Admit Card, identity proof, etc.
  - Possession of fire arms/ weapons during the examination.
  - Assault, use of force, causing bodily harm in any manner Threatening/ intimidating to the examination functionaries' i.e. Supervisor, Invigilator, Security Guard or Commission's representatives etc.
  - Using unfair means in the examination hall like copying from unauthorized sources such as written material on any paper or body parts, etc.
  - Possession of Bluetooth Devices, spy cameras, and any other electronic gadgets in the examination hall.
  - Impersonate/Procuring impersonation by any person.
  - Taking snapshots, making videos of question papers or examination material, labs, etc.
  - Sharing examination terminal through remote desktop software's/ Apps/ LAN/ VAN, etc. or attempting the same.
  - Filling up and submitting more than one application form for the same recruitment examination.
  - Attempt to hack or manipulate examination servers, data and examination systems at any point before, during or after the examination.
- (b) The Commission may also report the matter to Police/ Investigating Agencies, as deemed fit and the Commission may also take appropriate action to get the matter examined by the authorities/ forensic experts concerned.

**10) Commission's Decision Final:** The decision of the Commission in all matters relating to eligibility, acceptance or rejection of the applications, penalty for false information, mode of selection, conduct of examination(s), allotment of examination centers and preparation of merit list & post allocation, debarment for indulging in malpractices will be final and binding on the candidates and no enquiry/ correspondence will be entertained in this regard.

**11) Important Instruction/Information to the Candidates: -**

- (a) In Descriptive Paper candidate must write his/her correct Roll Number and Subject at the prescribed place on the cover page of the Answer Book. Candidates must also affix signature and Left-hand Thumb Impression in the relevant columns in the Answer Book. Answer Books not bearing Roll Number. Subject, Signature and Left-hand Thumb Impression will not be evaluated and such candidates shall be awarded zero marks.





Candidates shall not write any identity particulars e.g., name, roll number, mobile number, address, etc. inside the Descriptive Answer Book. Candidates who fail to adhere to these instructions will be awarded zero marks.

- (b) There shall be no provision for re-evaluation/ re-checking of scores in the Examination. No correspondence in this regard shall be entertained.
- (c) Sharing of marks with candidate: Marks obtained by an applicant in Main Examination are proposed to be shared with him/her after final merit list is published.
- (d) This is a State Cadre post. The candidate, on selection, may be asked to serve anywhere in Odisha.
- (e) If a candidate scoring more than cut-off marks at any Tier/stage of the examination is not qualified for the subsequent stage/ final selection due to any reason, he must represent to the Commission within one month of the declaration of the result.
- (f) Applicants who are Odisha Government servant should obtain a “**No Objection Certificate**” from their controlling authority and upload the same with the Online Application. At the certificate verification stage they must produce the original “No Objection certificate”. Those who were not Odisha Government Servants at time of application but became Government Servants subsequently during recruitment process, must submit No Objection Certificate at stage of certificate verification.

**By order of the Commission**

  
Secretary  
14/11/22

## Annexure-A

### Important Instructions to Candidates about filling up Online Application:

- Before applying, candidates must go through the instructions given in the notice of examination very carefully.
- Candidates in their own interest should submit online applications much before the closing date and not to wait till the last date to avoid the possibility of disconnection/ inability or failure to login to the OSSC website on account of heavy load on the website during the closing days or for any other reason.
- The Commission is not like to undertake detailed scrutiny of applications for the eligibility and other aspects at the time of written examination and, therefore, candidature will be accepted only provisionally. Candidates must go through the requirements of educational qualification, age, physical and medical standards (if any) etc. and satisfy themselves that they are eligible for the post(s). Copies of supporting documents will be sought at the time of Certificate Verification. When scrutiny is undertaken, if any claim made in the application is not found substantiated, the candidature will be cancelled and the Commission's decision shall be final.
- Candidates seeking reservation benefits available for SC/ ST/ SEBC/ PwD/ ESM/Sports Person must ensure that they are entitled to such reservation as per eligibility prescribed in the Notice. They should also be in possession of the certificates in the prescribed format in support of their claim.
- Candidates with only **benchmark physical disability** mentioned in Clause-2(b) of Advertisement will be considered as Persons with Disabilities (PwD) and entitled to age-relaxation/ reservation for Persons with Disabilities.
- When the application is successfully submitted, it will be accepted 'Provisionally'. Candidates should take printouts of the online Application Form for their own records.
- Only one online application is allowed to be submitted by a candidate for any recruitment Examination, Therefore, the candidates must exercise due diligence at the time of filling their online Application Forms. In case, more than one application of a candidate with different registration numbers is detected, all the applications will be rejected by the Commission and his candidature for the examination will be cancelled. If a candidate submits multiple applications and appears in the examination (at any stage) more than once, his candidature will be cancelled and he may be debarred from the examinations of all Commission.
- Before submission of the online application, candidates must check that they have filled correct details in each field of the form. After submission of the corrected/ final online application, no change/ correction/ modification will be allowed under any circumstances. Requests received in this regard in any form like Post, Fax, Email, by hand, etc. shall not be entertained by the Commission and will be summarily rejected.
- The candidates must write their name, Date of Birth, father's name and mother's name as given in the Matriculation Certificates otherwise their candidature may be cancelled at the time of Document Verification or as and when it comes into the notice of the commission.
- Applications with blurred/ illegible Photograph/ Signature will be rejected.



- Candidates must fill in their correct and active e-mail addresses and mobile number in the online application as correspondence may be made by the Commission through e-mail/ SMS.
- Candidates must carry two passport size recent colour photographs and one original valid Photo ID Proof such as Aadhaar Card/ printout of E-Aadhaar, Driving License, Voter Card, PAN Card, Identity Card issued by University/ College/ Government, Employer ID Card, ESM Discharge Book issued by Ministry of Defence , or any photo bearing ID card issued by Central/ State Government to the Examination Venue, failing which they will not be allowed to appear for the same. If Photo Identity Card does not have the Date of Birth printed in it, then the candidate must carry an additional original certificate in proof of his/her Date of Birth. In case of a mismatch in the date of birth mentioned in the Admission Certificate and Photo ID/ Certificate brought in support of the date of birth, the candidate will not be allowed to appear in the examination.
- In case of fake/ fabricated application/ registration by misusing any dignitaries name/ photo, such candidate/ cyber cafe will be held responsible for the same and liable for suitable legal action under cyber/ IT act.

### **How to Apply:**

- The applicants should go through this detail advertisement before filling up the online application form.
- The candidate may apply for the post as per her/his eligibility as per terms of the advertisement.
- All eligible candidates have to register themselves by clicking on “APPLY ONLINE” button on the home page of the Commission’s website [www.ossce.gov.in](http://www.ossce.gov.in).
- Those candidates who are applying for the first time have to register for the post by clicking on “NEW USER” button shown on the screen. On submitting the registration form a User Id and Password will be generated.
- On clicking “New user” or “Registered User”, instruction for filling up the Online Registration/ Re-registration and Application Forms shall appear on the computer screen. These instructions should be read carefully before proceeding with filling up the Application Form.
- Step by step procedure for registration/re-registration can be viewed by clicking on “Instruction to fill up Online Application Form”.

### **Pre-requisites for filling up online Application Form:**

- Applicants should possess and maintain an e-Mail Id and Mobile Number for accessing the OSSC web portal and to make Online Registration/Re-Registration and Application Form. Candidates should keep that e-mail Id and Mobile Number (used by them during registration) active so as to receive all important communication from the Commission till publication of the final result of this recruitment exam.
- Recent Passport size Colour Photograph of the Applicant, scanned in “jpg/jpeg” format with file size range of 20 kb to 100kb may be kept handy for uploading during Registration.
- Full Specimen Signature & Left /Right Thumb Impression of the Applicant, scanned in “jpg/jpeg” format between ranges of 20 kb to 50kb shall be kept handy for uploading during Registration.

- Scanned document must be in "Pdf" format between ranges of 100kb to 500 kb.
- Applicant may keep their required Certificates, Mark sheets, Aadhar Number & other documents ready while filling up the details of the educational qualification & other fields of Online Application Form.
- SC/ST/SEBC category candidates need to submit detail information of the valid online Caste Certificate issued by competent Authority in the online application form. If the valid online Caste Certificate issued by the competent Authority is not in possession of the applicants at the time of submission of the online application form, she/he must give a self-declaration in the format appended in the online application form.
- Candidate claiming age relaxation under "Ex-Serviceman" category need to upload any one of the Ex-Servicemen Documents i.e. Discharge Certificate/ Identity card/ PPO (wherein the date of entry, date of discharge and period of service rendered in Defence Forces have been reflected). Ex-Servicemen who going to retire within six months from the closing date of online application may apply for the post by obtaining "No Objection Certificate" from the appropriate authority mentioning therein the date of appointment, date of retirement and years of service rendered in Defence Forces. However, such candidates have to submit the discharge certificate on the date of certificate verification for considering their claims under Ex-Serviceman category. The scanned document must be in "Pdf" format between ranges of 100kb to 500 kb.
- Candidates claiming reservation/ age relaxation under "PwD (Persons with Disabilities)" category need to upload a valid online PwD certificate issued by Unique Disability Identification (UDID). The scanned document must be in "Pdf" format between ranges of 100kb to 500 kb.
- The candidate should ensure that the scanned Photograph and full Signature, Left/Right Hand Thumb Impression and other relevant documents are clearly identifiable/ visible. Otherwise the registration and application shall be liable for rejection. No correspondence on this account shall be entertained.
- Candidates must submit correct data /information in the Online Application Form. If at any stage of recruitment or thereafter, it is found that any information furnished by the candidate in her/his online application is false/incorrect or the candidate has suppressed any relevant information or the candidate otherwise does not satisfy the eligibility criteria prescribed for the post, her/his candidature for the post will be cancelled forthwith.

Note:-The candidates should ensure that they have filled in the correct data in the online application before submission. However, in case any data or information has been wrongly extend, they may correct the same in the Online Application Form (except the data filled in Registration) at any time before closing date of the online application . After the closing date of the online application , no correction /modification / changes in the online application form shall be allowed under any circumstances . Any request reviewed in any form in this regard through e-mail/ by hand shall not be entertained.

## Annexure-B

### Document to be submitted at time of Certificate Verification:

- a. Downloaded copy of Admission letter for Document Verification.
- b. Downloaded copy of Bio-Data-cum-Attestation form duly filled in.
- c. Copy of the Online Application form legibly signed by the candidate at appropriate place.
- d. HSC certificate & mark sheet or equivalent certificate in support of Date of Birth, issued by the concerned Board/Council.
- e. Diploma in Architecture pass Certificate & Marksheet from any institution registered by Govt..
- f. Certificate of practical knowledge in GIS Application with CADD.

or

Certificate of practical knowledge in Drafting and Designing Computer Software from any Govt registered institution.

- g. Certificate of Basic Computer Knowledge.
- h. Caste certificate issued by the competent authority for the purpose of employment/service. (In case of ST, SC& SEBC Candidates only) SEBC category candidates must submit photocopy of valid SEBC certificate issued by the competent authority which must be within one year prior to the closing date of online application.
- i. Certificate either of passing HSC examination with Odia as a compulsory subject, or in lieu thereof a certificate of passing Odia of M.E. standard issued by competent authority.
- j. Photocopy of permanent disability certificate not less than 40% issued by UDID (by Appropriate Medical Authority) in case of PwD candidates.
- k. Discharge certificate, identity card and document indicating the period of service rendered in defence forces in case of Ex-Servicemen candidates claiming age relaxation.
- l. NOC in case of candidates working in Government Service.

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## Annexure-C

### Syllabus for Main written examination of Planning Assistant

#### HISTORY OF ARCHITECTURE

##### a. **Indian Architecture**

###### **i. Buddhist Architecture**

Architectural characteristics and detail features  
Sketch of the Great Stupa of Sanchi, Chaitya Hall and Vihara.

###### **ii. Temple Architecture (Indo Aryan Style)**

Architectural characteristics and detail features of Odishan Temple  
Sketch of the Sun Temple at Konark, the Lingaraj Temple at Bhubaneswar

###### **iii. Muslim Architecture**

Architectural characteristics and detail features  
Sketch of Juma Masjid, Tajmahal and the Qutab Minar

##### b. **Contemporary Architecture**

Contemporary structures: Eiffel Tower, Bahai Temple and Burz -al-Khalifa  
Works of famous architects: Frank Lloyd Wright, Le Corbusier, B.V.Doshi and Charles Correa

#### ARCHITECTURAL DESIGN

##### **Design of a multi-storied building**

Secondary school, students' hostel, tourist home, Kalyan Mandap, Office complex, commercial complex, hotel, apartment

Background self- study- anthropometrics, activity analysis, bubble diagram, functional requirement, area analysis.

Case Study of any related building

Site analysis

Single line conceptual drawing.

Double line plan and elevations (preliminary drawings).

Presentation drawings.

Site Plan, Ground Floor Plan, Other floor plans, Two Elevations, Two Sections, Detail plan showing interior arrangement, Terrace Plan, Perspective view

#### REVIT ARCHITECTURE

- **Getting Started with Revit Architecture-** Introduction, starting a new project, Setting units, Snap settings, Saving a project, Using Zoom tools. Adding doors, Adding windows.
- **Using the Editing Tools-** Moving and coping elements, Trim and extend, Rotating elements, Mirroring elements, Creating an offset. Creating an array of elements, Matching elements, Aligning elements. Split element, Grouping elements. Scaling elements.
- **Working with Datum and Creating Standard Views-** Working with levels, Working with grids.
- **Using Basic Building Components-II-** Creating Floors, Creating roofs, Creating ceilings.
- **Using Basic Building Components-III-** Adding components, Adding Stairs, Creating Railings, Creating ramps, Adding curtain grids.
- **Adding Site Features**  
Creating top surface, Splitting a top surface, Merging top surfaces, Adding property line, .  
Creating building pads, Adding side components.
- **Using Massing Tools-** Creating an extrusion, Creating a revolved geometry, Creating a sweep,

Creating a blend.

- **Adding Annotation and Dimensions-** Adding tags, Adding dimensions,
- **Creating Project Details-** Creating callout view., Adding text notes, Creating a model text.
- **Creating Drawing Sheets-** Adding a drawing sheet to a project.
- **Creating 3D Views-** Creating orthographic view, Generating perspective view.

### Engineering Drawing

- **TYPES OF LINES, LETTERING & DIMENSIONING**

Demonstrate and explain the use of various types of lines.

Demonstrate the principle of single stroke, gothic lettering & numerals as per BIS.

- **SCALES**

Significance of scales in drawing; different scales, Define and draw plain scale and diagonal scale.

- **CURVES**

Explain Conic sections with illustration, Explain terms like focus, vertex, directrix and eccentricity, Draw conics sections by eccentricity method – Ellipse, Parabola and Hyperbola.

Draw Ellipse by concentric circle method and arc of circle method.

Draw parabola by Rectangle Method and Tangent Method.

- **ORTHOGRAPHIC PROJECTIONS**

Demonstrate the principles of 1<sup>st</sup> angle and 3<sup>rd</sup> angle projections with the help of models and draw symbols, Draw projection of points., Draw projection of straight line (parallel to both planes, parallel to one and perpendicular to other, parallel to one and inclined to other and inclined to both reference planes), Draw plane figure such as squares, rectangles, triangles, circle, Pentagon and hexagon, (perpendicular to one plane and inclined to other), Draw projections of solids such as prism, cylinder, cone, tetrahedron and pyramid in simple position (with axis parallel to one reference plane and perpendicular to other reference plane).

- **SECTION & DEVELOPMENTS**

Draw the sectional projection & development of prism, cylinder, cone and pyramid in simple position by a cutting plane perpendicular to one reference plane and inclined to other reference plane, Draw true shape of the cutting sections.

- **ISOMETRIC PROJECTIONS**

Draw isometric view & Isometric projection of prism, pyramid, cone & cylinder with axis horizontal and vertical with construction of isometric scales.

- **BUILDING DRAWING**

Explain terms related to building drawing, Draw plan, elevation of single room building with verandah (Flat roof according to given line plan and specification).

- **PRACTICES ON AUTO CAD**

Introduction-Settings, Limits etc. ,Auto CAD commands-Draw commands (Line, circle, arc, polygon, ellipse, rectangle, Edit command, Dimension commands and Modify Commands for two dimensional drafting only, Exercise for practice using Auto CAD.

## ENVIRONMENTAL STUDIES

- **Ecological succession.**  
Food chains, food webs and ecological pyramids, Introduction, types, characteristic features, structure and function of the following eco system, Forest ecosystem, Aquatic eco systems (ponds, streams, lakes, rivers, oceans, estuaries).
- **Biodiversity and its Conservation**  
Introduction-Definition: genetics, species and ecosystem diversity, Biogeographically classification of India, Value of biodiversity: consumptive use, productive use, social ethical, aesthetic and opt in values, Biodiversity at global, national and local level, Threats to biodiversity: Habitats loss, poaching of wild life, man wildlife conflicts.
- **Environmental Pollution.**  
Definition Causes, effects and control measures of: Air pollution, Water pollution, Soil pollution, Marine pollution, Noise pollution, Thermal pollution, Nuclear hazards. Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Disaster management: Floods, earth quake, cyclone and landslides.
- **Social issues and the Environment**  
Form unsustainable to sustainable development.  
Urban problems related to energy, Water conservation, rain water harvesting, water shed management, Resettlement and rehabilitation of people; its problems and concern, Environmental ethics: issue and possible solutions, Climate change, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust, case studies, Air (prevention and control of pollution) Act, Water (prevention and control of pollution) Act, Public awareness.

## SURVEYING

- **Chain Survey**  
State and explain the principles of chain surveying .Instruments used their description and checking their correctness.  
State and explain the ranging and chaining of a line,  
State and explain the errors in chaining and solve problem.  
State and explain the offsets.  
State and explain the average ordinate method.  
State and explain the Trapezoidal rule.  
State and explain the Simpson's Rule.
- **Compass Survey:**  
Describe and explain the prismatic compass, and its use.
- **Bearings:**  
Explain W.C.B and R.B and conversion from one to another.  
Explain fore and back bearings and their conversion.  
Explain computation of angles from bearings and bearing from angles.  
Explain Local attractions, its determination and necessary correction to the bearings.
- **Leveling:**  
Conduct the study of levels (Dumpy level).  
Explain the principles of leveling.  
Describe the temporary adjustment of dumpy level.



- Describe the leveling by H.I method and rise and fall method.
- **Contouring.**  
Explain the contour line, contour interval, horizontal equivalent.  
Explain the various characteristics of contouring.

### GRAPHIC DESIGN

#### **Free hand drawing study**

- **Basic Architectural Graphics.**  
Line, Plane, Texture, Tone, Colour
- **Geometrical forms**  
Geometrical solid composition, Abstract three dimensional composition  
The above exercise will be done by composing forms and planes for showing  
(1) Symmetry and Asymmetry (2) Rhythm (3) Unity in diversity (4) Solid and Void composition.
- **Anthropometrics and furniture sketches.**  
Human dimensions and proportions, Residential furniture drawing with dimensions as per anthropometric
- **Parts of building**  
Sketches of door and window openings, columns, parapet, boundary wall of residential building, Entrance door of restaurant and office, Entrance gate
- **Scaled drawing**  
Measured drawing of simple objects drawn in appropriate scale.  
(Furniture, watchman cabin, garden shelter etc.)

### BUILDING AND ENVIRONMENTAL SCIENCE

- **Climatic condition.**  
Introduction to Climatology and its effect on human comfort.  
Brief study of world climatic zones, tropical climate in particular.  
Elements of climate:  
Solar Radiation, Temperature, Humidity, Wind and Precipitation data and measurement  
Influence of topography and vegetation on climatic design
- **Climatic control in building.**  
Shading devices: vertical devices and horizontal devices.  
Ventilation and air flow principles, principles of natural ventilation  
Design and Orientation of building, building material and construction in warm humid climate.  
Brief idea about different means of mechanical control for heating, ventilation, cooling, air-conditioning.
- **Introduction to landscape design.**  
Definitions (Different types of Open spaces, e.g. Park, Natural Green areas, Playground)  
Factors that influence landscape design.  
Different landscape style and historic landscape (only sketch.)  
Japanese, Mughal, English
- **Properties and Behaviour of sound**  
Brief Introduction to architectural acoustics-characteristics and measurement of sound, frequency, intensity, decibel scale (only definition).  
Source, path receiver, reflection and absorption.  
Reverberation time calculations using Sabine's formula. (with the example of an auditorium)

Definition of dead room, live room and diffusion.  
Definition of echo, flutter echo, creep and focusing.  
General brief description of acoustical materials –acoustical tiles, fibre board, acoustic plaster and composite materials

### **BUILDING SERVICES**

- **Water supply:**  
Principles of water supply system (Standards adopted for water supply as per NBC recommendation.), Basic idea of water treatment process.  
Water distribution system from reservoirs (Methods of laying out of distribution pipes).  
Municipal connections and positions  
Elements of domestic water supply (sump, overhead tank, types of taps, types of valves, pipe size and pipe fittings)
- **Sanitation:**  
Importance of sanitation in relation to public health.  
Refuse types, collection and disposal Separate, combined and partially separated methods, Elements of domestic sanitation, Septic tank, Types of septic Tank, construction of septic tank ,Volume calculation, Soak Pit, Manhole, Inspection chamber, Sanitary connections and fittings (wash basin, showers, kitchen sink, water closet, Flushing cistern, Bidets and Urinals), Traps (P-trap, Q-trap and S-trap)  
Anti siphon and ventilation pipes, Soil pipe and waste pipe
- **House drainage and Sewerage**  
Laying of simple house drainage systems and sub-soil drains, Laying of sewers
- **Design a small single family residence (single storied)**  
Background study (Self Study)- anthropometrics, activity analysis, bubble diagram, functional requirement, area analysis, Single line conceptual drawing, Double line plan and elevations (preliminary drawings), Presentation drawings:  
Site Plan, Ground Floor Plan, Two Elevations, Two Sections, Terrace Plan, A duplex bungalow.  
Site analysis  
Site plan, Ground floor plan showing interior arrangement, Fir Fundamentals of site planning
- **LANDSCAPE DETAILS.**  
Paving, Boundary wall with entrance gate, Retaining wall, Water body, Planter box, Lamp post Seating
- **Design of Open Spaces**  
Parks (Neighbourhood or city level), Boulevards and pavement

### **HUMAN SETTLEMENT PLANNING**

- **Introduction to Urban and Rural Planning**  
Scopes, Objectives and Need for Urban and Regional Plan,  
Physical Characteristics, Urban and Rural Inter relationship, Urban Planning Challenges and solutions in India, Theories of Urban Planning and Spatial Planning and Land use Planning, Tools and Techniques of Urban Planning.
- **City Master Plan**  
State and explain the Master Plan, Need of a Comprehensive Development Plan,  
Objective Process and Method of developing City Master Plan, Neighborhood and local area planning, Site Plan and Layout Plan, development guidelines rule and regulation pertaining to development control and management, Databases for urban planning , concept of Transferable

- Development Rights.
- **Zoning**  
Zoning regulation and permissible activities.
- **Housing**  
Housing and Neighborhood units, policy for housing for all, affordable housing, Commercial centers.  
Traffic and transport system in towns and cities.

### ESTIMATION AND SPECIFICATION

- **Method of building estimates.**  
State and explain the **centerline method** of estimation of a building.
- **Estimate of buildings.**  
Estimate the detailed quantity of a single roomed building, Estimate detailed quantity of a single roomed building with provision for one kitchen, onetoilet and front verandah.
- **Analysis of rate.**  
Analyse the rates of cement concrete work (1:4:8 and 1:2:4), Analyse the rates of Brick work with (1:6) cement mortar.
- **Specifications.**  
Plain cement concrete in foundation, Brick work in foundation and super structure, R.C.C work in foundation and super structure, Plastering ,Flooring (A.S flooring, terrazzo flooring, marble, tile), Painting.

### LANDSCAPE DESIGN

- **Landscape Details.**  
Paving, Boundary wall with entrance gate, Retaining wall, Water body, Planter box, Lamp post Seating
- **Design of Parking lots**
- **Design of Open Spaces**  
Parks (Neighborhood or city level), Boulevards and pavement

### DESCRIPTIVE GEOMETRY

- **Surface development**  
Development of the surface of geometrical solids, Cube, Cuboids, Pyramid, Prism, Cylinder and Cone.)
- **Isometric view of the following**  
Geometrical forms, Cubical forms, Complex forms
- **Axonometric view of the following**  
Group of solids, Interior view of a small building.
- **Perspective view**  
One point perspective, Interior of a kitchen or any other room, Two point perspectives of solid geometrical forms, Measuring point method of solid geometrical forms

## BUILDING MATERIALS

- **Stone:** Classification of stones, Properties of good quality building stone, Uses of Building Stone.
- **Brick:** Classification of bricks, Properties of good quality of bricks
- **Cement:** Ingredients of cement, Types of cement, Properties of good cement, Uses of cement
- **Concrete and R.C.C.-** Components of concrete, Characteristics of concrete, Use of concrete and R.C.C, Distinguish between plain cement concrete and R.C.C
- **Timber:** Constitution and properties of timber (showing cross section), Use of woods for different engineering purpose, Characteristics of a good timber
- **Paints, Varnish, Distemper:**  
Composition of paints varnishes and distempers, Qualities of good paints, varnishes and distempers, Uses of paints, varnishes and distemper.
- **Ferrous and non-ferrous metals:**  
Type ferrous and non-ferrous metals, Properties of good ferrous non-ferrous metals  
Uses of steel in engineering applications
- **Plastics/PVC.-** Types of plastic, Uses and advantages of plastic
- **Glass:** Types of glass, Properties of glass
- **Aluminum:** Commercially available channels and sections

## BUILDING CONSTRUCTION

- **Stone masonry**  
Types of stones used in building construction, Types of stone masonry, Types of stone dressing, Principles of stone masonry,
- **Brick masonry**  
Types of bricks used in masonry, Principles of brick masonry, Types of bonds in brick masonry
- **Cement concrete construction**  
Materials used in cement concrete construction, Mixing, placing and compacting of cement concrete, Curing of cement concrete work, Types of cement concrete construction - Caste-in-situ and precast, Advantages of cement concrete, Use of reinforcement in cement concrete work, Defects in cement concrete construction and their removal
- **Foundation**  
Foundations for load bearing walls and piers, Isolated & combined foundation in R.C.C., Raft foundation, Pile foundation.
- **Carpentry & Joinery-** Tools used in carpentry works, Joineries used in timber works
- **Doors & Windows** – Ledged and braced door, Ledged and framed door, Ledged, framed and braced door.  
Framed and panelled door, flush doors
- **Roofs-** Classification of roofs, Construction method and details of pitch roofs
- **Stairs-** Definitions, Types of staircase, Wooden staircase, RCC Staircase
- **Floors-** Types of floors, Methods of laying floors, Finishing of floors with different floor finishes like cement, mosaic, terrazzo, tiles, marble and PVC/Linoleum

- **Form work-**

Function of formwork, Materials used in form work, Formwork for columns, floors, walls & stairs.

### DESIGN OF RCC STRUCTURE

- **Analyze the single reinforced section**

Definition of terms related to single RCC section.  
properties of reinforced concrete, grades of concrete and steel.  
Moment of resistance calculation.

- **Analysis of double reinforced section**

Moment of resistance calculation

- **Design of slabs**

Design of one way slabs.  
Design of two way slabs (I.S code method only).

- **Design of axially loaded columned.**

Effective length of a column.  
Long and short column.  
Safe load on column.  
The design of square and rectangular column.

### ENGINEERING MECHANICS

- **FUNDAMENTALS OF ENGINEERING MECHANICS**

Fundamentals.

Definitions of Mechanics, Statics, Dynamics, Rigid Bodies, Force  
Force System.

Definition, Classification of force system according to plane & line of action. Characteristics of  
Force & effect of Force Principles of Transmissibility & Principles of Superposition. Action  
& Reaction Forces & concept of Free Body  
Diagram.

Resolution of a Force.

Definition, Method of Resolution, Types of Component forces, Perpendicular components &  
non-perpendicular components.

- **Composition of Forces.**

Definition, Resultant Force, Method of composition of forces, such as  
Analytical Method such as Law of Parallelogram of forces & method of resolution.

- **Graphical Method.**

Introduction, Space diagram, Vector diagram, Polygon law of forces.

Resultant of concurrent, non-concurrent & parallel force system by Analytical & Graphical  
Method.

- **Moment of Force.**

Definition, Geometrical meaning of moment of a force, measurement of moment of a force & its  
S.I units. Classification of moments according to direction of rotation, sign convention, Law of  
moments, Varignon's Theorem, Couple – Definition, S.I. units, measurement of couple, properties  
of couple.

- **EQUILIBRIUM**  
Definition, condition of equilibrium, Analytical & Graphical conditions of equilibrium for concurrent, non-concurrent & Free Body Diagram.  
Lamia's Theorem – Statement, Application for solving various engineering problems.
- **FRICITION**  
Definition of friction, Frictional forces, Limiting frictional force, Coefficient of Friction.  
Angle of Friction & Repose, Laws of Friction, Advantages & Disadvantages of Friction.  
Equilibrium of bodies on level plane – Force applied on horizontal & inclined plane (up & down).  
Ladder, Wedge Friction.
- **CENTROID & MOMENT OF INERTIA**  
Centroid – Definition, Moment of an area about an axis, centroid of geometrical figures such as squares, rectangles, triangles, circles, semicircles & quarter circles, centroid of composite figures.  
Moment of Inertia – Definition, Parallel axis & Perpendicular axis Theorems. M.I. of plane lamina & different engineering sections.
- **SIMPLE MACHINES**  
Definition of simple machine, velocity ratio of simple and compound gear train, explain simple & compound lifting machine, define M.A, V.R. & Efficiency & State the relation between them, State Law of Machine, Reversibility of Machine, Self Locking Machine.  
  
Study of simple machines – simple axle & wheel, single purchase crab winch & double purchase crab winch, Worm & Worm Wheel, Screw Jack.  
Types of hoisting machine like derricks etc, Their use and working principle. No problems.
- **DYNAMICS**  
Kinematics & Kinetics, Principles of Dynamics, Newton's Laws of Motion, Motion of Particle acted upon by a constant force, Equations of motion, De- Alembert's Principle.  
  
Work, Power, Energy & its Engineering Applications, Kinetic & Potential energy & its application.  
  
Momentum & impulse, conservation of energy & linear momentum, collision of elastic bodies, and Coefficient of Restitution.

### **BASIC ELECTRICAL ENGINEERING**

- **FUNDAMENTALS**  
Concept of current flow.  
Concept of source and load.  
State Ohm's law and concept of resistance.  
Relation of V, I & R in series circuit.  
Relation of V, I & R in parallel circuit.  
Division of current in parallel circuit.  
Effect of power in series & parallel circuit.



Kirchhoff's Law.

Simple problems on Kirchhoff's law.

- **A.C. THEORY**

Generation of alternating emf.

Difference between D.C. & A.C.

Define Amplitude, instantaneous value, cycle, Time period, frequency, phase angle, phase difference.

State & Explain RMS value, Average value, Amplitude factor & Form factor with Simple problems.

Represent AC values in phasor diagrams.

AC through pure resistance, inductance & capacitance

AC through RL, RC, RLC series circuits.

Simple problems on RL, RC & RLC series circuits.

Concept of Power and Power factor

Impedance triangle and power triangle.

- **GENERATION OF ELECTRICAL POWER**

Give elementary idea on generation of electricity from thermal, hydro & nuclear power station with block diagram

- **CONVERSION OF ELECTRICAL ENERGY**

(No operation, Derivation, numerical problems)

Introduction of DC machines.

Main parts of DC machines.

Classification of DC generator

Classification of DC motor.

Uses of different types of DC generators & motors.

Types and uses of single-phase induction motors.

Concept of Lumen

Different types of Lamps (Filament, Fluorescent, LED bulb) its Construction and Principle.

Star rating of home appliances (Terminology, Energy efficiency, Star rating Concept)

- **WIRING AND POWER BILLING**

Types of wiring for domestic installations.

Layout of household electrical wiring (single line diagram showing all the important component in the system).

List out the basic protective devices used in house hold wiring.

Calculate energy consumed in a small electrical installation

- **MEASURING INSTRUMENTS**

Introduction to measuring instruments.

Torques in instruments.

Different uses of PMMC type of instruments (Ammeter & Voltmeter).

Different uses of MI type of instruments (Ammeter & Voltmeter).

Draw the connection diagram of A.C/ D.C Ammeter, voltmeter, energy meter and wattmeter. (Single phase only).

## BASIC ELECTRONIC ENGINEERING

- **ELECTRONIC DEVICES**

Basic Concept of Electronics and its application.

Basic Concept of Electron Emission & its types.

Classification of material according to electrical conductivity (Conductor, Semiconductor & Insulator) with respect to energy band diagram only.

Difference between Intrinsic & Extrinsic Semiconductor.

Difference between vacuum tube & semiconductor.

Principle of working and use of PN junction diode, Zener diode and Light Emitting Diode (LED)

Integrated circuits (I.C) & its advantages.

- **ELECTRONIC CIRCUITS**

Rectifier & its uses.

Principles of working of different types of Rectifiers with their merits and demerits

Functions of filters and classification of simple Filter circuit (Capacitor, choke input and  $\pi$ )

Working of D.C power supply system (unregulated) with help of block diagrams only

Transistor, Different types of Transistor Configuration and state output and input current gain relationship in CE, CB and CC configuration (No mathematical derivation)

Need of biasing and explain different types of biasing with circuit diagram. (only CE configuration)

Amplifiers (concept), working principles of single phase CE amplifier

Electronic Oscillator and its classification

Working of Basic Oscillator with different elements through simple Block Diagram

- **COMMUNICATION SYSTEM**

Basic communication system (concept & explanation with help of Block diagram)

Concept of Modulation and Demodulation, Difference between them

Different types of Modulation (AM, FM & PM) based on signal, carrier wave and modulated wave (only concept, No mathematical Derivation)

- **TRANSDUCERS AND MEASURING INSTRUMENTS**

Concept of Transducer and sensor with their differences.

Different type of Transducers & concept of active and passive transducer.

Working principle of photo emissive, photoconductive, photovoltaic transducer and its application

Multimeter and its applications

Analog and Digital Multimeter and their differences

Working principle of Multimeter with Basic Block diagram

CRO, working principle of CRO with simple Block diagram

## INTERIOR DESIGN

- **Interior design of a residence/ office/commercial space**

Bungalow, Restaurant, small office space or shop (Any one of these)

Background self- study: anthropometrics, space organization with furniture, study of standard size of furniture as per functional requirement.

Study of interior finishes: walls, floors and ceiling,

Study of types of materials available and their market rate

Single line plan showing interior layout

Conceptual design of furniture units

Presentation Drawings

i. Floor plans showing interior layout





- ii. Sectional Elevations of each room showing interior space, furniture and walls
- iii. Details of furniture units
- iv. Electrical layout showing lighting system
- v. Brief report on materials and colour scheme to be used

- **Estimate of the interior scheme**

Calculation of quantity of material and rate analysis

Cost Estimate of the interior scheme (with specifications, quantity and marketrate).

## REMOTE SENSING AND GIS

- **Remote Sensing**

Definition & Concept of Remote sensing

Physics of remote sensing - Electromagnetic radiation , Radiation Law, Electromagnetic spectrum, Relation between wave length & frequency, Visible spectrum , Infrared micro waves, Interaction of earth features with EMR.

Aerial photography – scale of aerial photographs Height measurements, concept of stereo photography, concept of photogrammetric

Different platform used in remote sensing.

Different Sensors used in satellite remote sensing and working concept of sensor.

Details of Remote sensing satellites---IRS series land sat, Spot, Envisat, Quick Bird, IKONS, ORBVUEW, Geo eye, etc.

Digital characteristics of satellite image, concepts of spectral, spatial, Radiometric & Temporal Resolution

Digital Image Processing (DIP) Geometric correction of satellite image.

DIP—Enhancement technique of satellite image.

DIP –Unsupervised & supervised classification.

Fundamental concept of land features mapping from satellite image of different Resolution.

- **Geographic Information System**

Definition and concept of GIS.

Concept of Database Management System, example of spatial and Attribute.

Concept & comparison between vector and raster data, raster/ vector conversion.

Basic features in spatial database generation—point, arc, (line) node & polygon, topology.

Concept of coverage, shape files and eco files.

Digitization method, weed tolerance, node snap, arc snap fuzzy tolerance, ticmatching.

Identification of errors – under shoot, over shoot, intersection errors, missing or multiple label points in polygons etc.

Joining of spatial and attribute data.

Spatial analysis—Boolean operation, clipping, intersection, buffer analysis.

Surface modeling—contour/lattice generation, TIN formation, slop/ aspectdetermination, cross section / profile generation etc.

Attribute Editing.

Use of GIS in surface features and real world database linking & modeling with respect to survey & mapping.

- **Global Positioning System (GPS)**

Need of GPS based surveys and introduction to GPS

Earth Coordinate System: concept of latitude and longitude, fundamental of projection system, definition of datum

Concept and working of GIS

Sources of errors in GPS observation  
Current & Future satellite based Navigation system  
Concept and working of differential GPS

## PHOTOSHOP

- **Introduction to Photoshop**  
What is Photoshop?  
System requirements, Image size and resolution, Creating working space, Scanning images
- **Saving images,**  
Opening images, Importing images, Placing files, Introduction to tools, Tool box ,Tool option bars, Tools presets, Selection tools, Selection menu
- **Working with layer**  
What is a layer?, Blending Modes, Features of an adjustment layer, Working with layers
- **Creating shapes and mat painting**  
Painting, Drawing, Pen tool, Work path, Painting tools, Brush presets
- **Transforming and retouching**  
Cropping images, Working with canvas size, Transforming objects, Working with clone stamp tools, Retouching the image
- **Colour and tonal adjustments**  
Colour corrections, Sharpening images, Colour models, Colour gamuts, Adjusting colour display for cross-platform, Variation, Changing Screen mode
- **Filters**  
Distorting with liquefy command, Pattern maker, Filter Gallery, Filters
- **Text**  
Text tool, Creating text effects using filters
- **Working with channels and masking**  
Channels and bit depth, Converting between bit depths, Converting between modes, Features of mask, Working with alpha-channels
- **Project**  
Prepare architectural presentation drawings of, Building lay-out plan, Building plan with furniture lay-out, Sections, Elevations

## COMPUTER APPLICATION

- **COMPUTER ORGANISATION**  
Introduction to Computer Evolution of Computers Generation of Computers Classification of Computers  
Basic Organisation of Computer (Functional Block diagram) Input Devices, CPU & Output Devices.  
Computer Memory and Classification of Memory
- **COMPUTER SOFTWARE**  
Software concept, System software, Application software Overview of Operating System Objectives and Functions of O.S,  
Types of Operating System: Batch Processing, Multiprogramming, Time Sharing OS Features of DOS, Windows and UNIX  
Programming Languages Compiler, interpreter Computer Virus Different Types of computer virus Detection and prevention of Virus Application of computers in different Domain
- **COMPUTER NETWORK AND INTERNET**  
Networking concept, Protocol, Connecting Media, Data Transmission mode Network Topologies,



Types of Network

Networking Devices like Hub, Repeater, Switch, Bridge, Router, Gateway & NIC Internet Services like E-Mail, WWW, FTP, Chatting, Internet Conferencing, Electronic Newspaper & Online Shopping

Different types of Internet connectivity and ISP

- **FILE MANAGEMENT AND DATA PROCESSING**

Concept of File and Folder

File Access and Storage methods. Sequential, Direct, ISAM Data

Capture, Data storage

Data Processing and Retrieval

- **PROBLEM SOLVING METHODOLOGY**

Algorithm, Pseudo code and Flowchart Generation of Programming Languages Structured Programming Language

Examples of Problem solving through Flowchart

- **OVERVIEW OF C PROGRAMMING LANGUAGE**

Constants, Variables and Data types in C Managing Input and Output operations. Operators, Expressions, Type conversion & Typecasting

Decision Control and Looping Statements (If, If-else, If-else-if, Switch, While, Do-while, For, Break, Continue & Goto)

Programming Assignments using the above features.

- **ADVANCED FEATURES OF C**

Functions and Passing Parameters to the Function (Call by Value and Call by Reference) Scope of Variables and Storage Classes

Recursion Function and Types of Recursion

One Dimensional Array and Multidimensional Array String

Operations and Pointers

Pointer Expression and Pointer Arithmetic Programming Assignments using the above features.

Structure and Union (Only concepts, No Programming)

### AutoCAD

- **Getting started.**

AutoCAD screen, Working platform, Methods of command entry, Coordinate-system

Selection of Units Selection of working area, Types of commands

- **Draw commands**

Arc, Circle, Ellipse, Donut, Polygon, Line, Pline

- **EDIT COMMAND**

ERASE, OOPS, TRIM, COPY, MOVE, OFFSET, ARRAY, BREAK, STRETCH, EXPLODE, MIRROR, FILLET, CHAMFER, PEDIT, EDIT, HATCH, U, SCALE.

- **DISPLAY COMMANDS**

PAN, REDRAW, REGEN, ZOOM

- **UTILITY COMMANDS**

End, LIMITS, QUIT, SAVE, UNITS

- **TABLE COMMANDS**

- DIMENSION,HATCH,TEXT
- **INQUIRY COMMAND**  
AREA,DIST,HELP,ID,LIST
- **DRAWING AIDS**  
OSNAP,TRAKING,SNAP
- **SPECIAL COMMANDS**  
BLOCK,INSERT,LAYER,LIME TYPE,LT SCALE,WB BLOCK
- **Introduction to 3D Modeling**  
State and explain wire frame model  
State and explain solid modeling
- **Isometric VIEW/perspective VIEW**  
Isometric drawings  
NE – Isometric view  
NW – -do-  
SE – -do-  
SW- -do-  
Top view, Bottom view, Perspective drawing
- **Coordinate System.**  
WCS,UCS,UCS ICON
- **3D entities and commands**  
3D PLAN,3D ELEVENTION,3D LINE  
3D FACE,3D SOLIDS,BOOLEAN operation, Union subtraction and intersection  
ROTATE,REVOLVE,REGION,EXTURDE
- **3D Viewing & Editing**  
HIDE, SHADE, V POINT PLAN VIEW,3D VIEW CAMERA,SOLID EDITING
- **RENDERING**  
Illustrate with light and shade, sky, background and trees

## SMART TECHNOLOGY

### **Smart Technology**

Concept of IOT, How IOT works, Components of IOT, Characteristics of IOT, Categories of IOT, Applications of IOT- Smart Cities, Smart Transportation, Smart Home, SmartHealthcare, Smart Industry, Smart Agriculture, Smart Energy Management etc.

### Salient Points of Act, Rules, & Regulations on Urban Planning.

- Odisha Development Authority Act,1982 and amendments.
- Odisha Town Planning & Improvement Trust Act, 1956 and amendments.
- Real Estate (Regulation & Development ) Act,2016.
- ODA, Planning & Building Standard Rules,2020 and amendments.
- Odisha Town Planning & Improvement Trust (Planning &Building Standard ) Rules, 2021.
- Odisha Development Authority(Common application Form) Rules,2016.
- Factories Act, 1948 and amendments.
- Payment of wages Act, 1936 and amendments.
- Odisha Fire prevention & Safety Rules, 2017 and amendments.

*Ans*