2.5.1 - Mechanism of internal assessment is transparent and robust in terms of frequency and mode. Write description within 200 words.

The internal assessment process of the institution is regular and time bounded. Through this internal assessment the teacher assesses the quality and capability of the students. This process gives an appropriate idea to the teacher for providing final internal marks. It is also a very reliable source to differentiate slow learner and fast learners. From the very beginning of the session our teachers conduct oral tests, surprise tests to evaluate students capacity and interest about the subject. Regular written tests also give the understanding about the students. The writing capability is assessed through the written test. All the assessments results are shared with the students to improve and correct their mistakes. After few months the slow learners and fast learners are attended as per their capability.

Students are also evaluated through assignments. Assignments help them to improve their writing skill. Apart from this, students give chart presentation, class presentation and are assessed by the teacher. Group discussion is a very popular method among the students. Reading room is used to evaluate reading habits of the students. Regular attendance in the class is an important internal assessment.

Seva Sadan Mahavidyalaya, Burhanpur
B.Sc. IIIrd Year Internal Examination-November 2022
MATHEMATICS
Linear Algebra and Numerical Analysis

Max.Marks: 15] [Min. Marks: 05

Attempt all questions. Each question carries equal marks.

1. (a) Prove that a subset W of a vector space $V(F)$ is a subspace of V iff $\forall \quad \alpha, \beta \in W$ and $\quad a, b \in F \implies a\alpha + b\beta \in W$.

   (b) Prove that there exists a basis for each finite dimensional vectoer space.

2. (a) Find the matrix representation of linear tranformation T on $V_3(R)$ defined as
   $T(a, b, c) = (2b + c, a - 4b, 3a)$
   corresponding to the basis $B = \{(1, 1, 1), (1, 1, 0), (1, 0, 0)\}$.

   (b) Let U and V be two vector spaces over the field F and let T be a linear transformation from U into V. If U is a finite dimentional, then show that rank(T)+nullity$(T) = $ dim$U$

3. (a) Find the positive root of $x = \cos x$ by Newton-Raphson method. Take the initial approximation as $x_o = 0.8$.

   (b) From the following find $\sin 52^o$ by using Newton's forward difference formula:
   ($\sin 45^o$, 0.7071), ($\sin 50^o$, 0.7660),($\sin 55^o$, 0.8192),($\sin 60^o$, 0.8660)